MEMOIRS
OF THE
CARNEGIE MUSEUM

VOL. XII PART I

THE EXPLORATION OF SOUTHAMPTON ISLAND

SECTION 1— PREFATORY

REASONS FOR UNDERTAKING THE STUDY

BY GEORGE MIKSCH SUTTON

Many an explorer, eager to add a little to what we call the sum of human knowledge, or dreaming of wealth and fame, has sailed the polar seas. Many a scientist has fought his way across tundra and through ice-fields hoping to conquer and dispel the apparent inscrutability of the frozen ocean, the ice-covered wastes, and the aurora-curtained sky. Many a bird-lover, ashamed that we should know so little about the nesting-habits of some of our common migrant species, has made his way to the inhospitable Barren Grounds, or to the remote Arctic islands, confident of finding there in their summer homes creatures, whose domain is the wide world itself, and whose seasonal flights take them indeed "from zone to zone." All these, explorers, scientists, and bird-lovers, acknowledge the charm of the Far North; but none can precisely explain it. One finds one's self while in the Arctic wondering why one should leave a pleasant home for such a cold and savage land, and how, indeed, any race of beings, be they ever so rugged, can continue to remain there. One leaves the Arctic wondering whether one can again resume the noisy intricacies of the over-organized civilization, to which one must return. Safe home from the northern seas, one recoils a little at the thought of winter-long isolation, of frozen face and hands, of insufficiency of food; but one finds one's self dreaming, nevertheless, of returning some day to the magnificent, unquestioning, impersonal friendliness of the tundra.

I went to Southampton Island partly because, more than once having been under the spell of the clean-edged beauty of the Arctic, I felt that I must return. In the year 1920, through the kindness of Mr. W. E. Clyde Todd, Curator of Ornithology at the Carnegie Museum, I had the opportunity of studying the Labrador coast from Battle Harbor to Cape Chidley as a member of one of the expeditions of the Carnegie Museum. I was wofully untrained for work in the field, but Mr. Todd was patient, even indulgent. Not only did I learn a great deal from him about field technique, but I caught from him some of that deep interest in zoögeographical problems and in the study of life-histories, which has taken him back year after year to the mighty wildernesses of the Labrador Peninsula.

During subsequent years I was fortunate enough to be included in the expeditions both of Mr. Todd and Mr. John Bonner Semple down the Abitibi and Missinaibi Rivers. Finally in 1926 I traversed in canoe with these two gentlemen the entire eastern coast of Hudson Bay from Moose Factory to Richmond Gulf, and thence went in schooners of the Revillon Frères Trading Company to Port Harrison and Cape Wolstenholme.

All these journeys were made in mid-summer, since it was impossible to navigate the ice-filled waters earlier in the season. We of course encountered many interesting species of Arctic birds, but our contacts with them were tantalizingly brief. We reached their breeding-grounds so late that we almost never witnessed any antics of courtship. We had no chance to watch the building of nests, and collected but few eggs. Often the birds were in that silent, bedraggled stage, which follows the nesting season. Flocks of young in juvenal plumage were indeed interesting, and unusual birds, whether in perfect feather or not, were sure to be thrilling when studied in their remote habitat, but I found myself over and over again saying to myself, as I collected, or made sketches of buntings, longspurs, loons, and shore-birds: "I must see these birds during their nesting season; I must witness their arrival in the spring; I must watch them mate and build their nests; I must see them depart for the south in the fall; in short, I must somehow live their Arctic life with them, if I am really to know and understand them, and if I am to make pictures which accurately and sympathetically record their postures and facial expression."

A year in the Arctic! How should I get there? Just where should I go? On the expedition of 1926, Mr. Semple and I had had opportunity to discuss such questions, since, owing to the loss of the propeller of the *Albert Revillon* our trip from Cape Wolstenholme to Montreal, via Fort Chimo in Ungava Bay, was considerably prolonged. Even at that time there was lodged in the back of my mind the hope that I might undertake a biological survey of Southampton Island.

It was not, however, until the summer of 1928 that I definitely decided upon Southampton as the objective of my expedition. While returning on the steamer *North Shore* from a study of the bird-life of the Gulf of Saint Lawrence, I had the pleasure of meeting Mr. Ralph Parsons and Mr. Sam G. Ford, both of the Hudson's Bay Company, who joined in expressing the belief that residence for a year at Southampton would be possible. The Company had established a Post on the Island in 1924, and Mr. Ford himself was the Factor. When this gentleman told me of the birds he had seen, of the nests he had found, of the natives with whom he had lived, and finally of the pleasure he would have in helping me personally in my study of the avifauna of "our Island," my enthusiasm mounted to a high pitch. Finally when Mr. Parsons, at that time the District Manager of the Saint Lawrence-Labrador District, expressed his belief that the Company would agree to my establishing headquarters at their Post, and would help me in all possible ways, I decided then and there that I would go to Southampton during the following summer, to remain there for a year.

I found that but little scientific work had been done on the great Island. Though some collections had been made, these were not by any means fully representative. Certain parts of the shore-line were not even properly charted. Virtually nothing was known about the southeastern part of the Island, some of which apparently had not been visited by white men since the days of Button and Baffin. The more I sought for literature, dealing with the fauna, flora, or geology of the island, the more fully convinced I became that the great territory needed to be studied. Furthermore I thought my study would be valuably supplementary to Mr. Todd's thorough work in the Labrador Peninsula, and to Mr. Edward

A. Preble's survey of the Hudson Bay Region which, extensive as it had been, had scarcely touched Southampton Island. Then too Mr. Percy A. Taverner, who during recent years had been making such important and welcome contributions to our knowledge of the bird-life of British America, assured me that a study of Southampton Island was needed before the distribution and migratory movements of certain birds could properly be understood.

Mr. Ford's statement that native Eskimos had known for years of a nesting colony of Blue Geese at Cape Kendall, on the western side of Southampton, gave me a definite objective from the first. Whatever else I might accomplish, I felt that at least I might substantiate the reports of the natives concerning these geese, by myself journeying to Cape Kendall. At this time, Mr. Dewey Soper had not yet succeeded in locating the breeding-grounds of this bird in Baffin Island, so the definite summer range of the species was yet to be discovered.

My plans soon began to take definite form. I would reach Southampton on the Hudson Bay Company's supply-boat, the *Nascopie*; I would live, when in the vicinity of the Post, with Mr. Ford himself; the Company would do all in their power to help me. When I had arranged for permits, planned my equipment thoroughly, and made such adjustments as were necessary in leaving home for a year, I was ready for the great adventure.

ACKNOWLEDGMENTS

My first word of thanks is to Mr. John Bonner Semple, of Sewickley, Pennsylvania, Trustee of the Carnegie Institute, the gentleman who made my expedition possible. Not only did Mr. Semple give me all the financial support I needed for my enterprise, but he personally examined all my equipment, especially the fire-arms and ammunition, designed and constructed my auxiliary collecting barrels, furnished me with articles of trade for the Eskimos, and in every way possible made my departure and return pleasant.

The officials and representatives of the Hudson's Bay Company, who assisted me in many ways, were uniformly courteous and considerate. The Company permitted me to establish headquarters at their Southampton Post; they ordered many of my supplies; and they were most attentive to my problems. From the very outset I had the feeling that they were genuinely interested in the success of my undertaking. This interest was, and is, a modern expression of the pioneer spirit, which led those famous gentlemen of far-gone years, into their various adventurings into Hudson Bay. Mr. Ralph Parsons and Mr. James Cantley, who arranged for my passage on the *Nascopie*, were most gracious. Mr. William Ritchie, who saw that my luggage was properly taken to Southampton, and who watched over the eighteen ponderous chests and barrels of specimens on their long journey out, was efficient and careful. My especial thanks are due Mr. Ritchie for the manner in which he cared for this shipment in Newfoundland, where it was necessary to reload it upon a steamer bound for New York. Mr. Hugh Conn, General Inspector, generously gave me a passage on his neat little motor-yacht *Nowya* from Chesterfield Inlet south to Churchill during the summer of 1930, thereby enabling me to reach home much earlier than I could have done, had I remained on the *Nascopie*. Mr. George Watson, who greeted me at Southampton after my eventful sojourn, and who arranged for my return to civilization, was a gentleman whose quiet friendliness impressed me instantly.

The various Chief Traders or Post Factors, with whom I came into contact on my way south along the west coast of Hudson Bay, were all most hospitable. Mr. S. J. ("Lofty") Stewart, at Chesterfield, Mr. Sam Voisey, at Tavane (Mistake Bay), and Mr. L. Williamson,

at Churchill, all somehow succeeded in making me feel genuinely welcome. Then there were the men on the *Nascopie*: Captain John Murray, who regaled me with recollections of his experiences on and about Southampton; Mr. Fred W. Berchem, Mate, who saw that my shipments were properly covered in the hold; Dr. W. J. K. Clothier, who gave me some medicines, which fortunately I did not need to use; Chief Engineer John Leddingham, Mr. Hardwick, Mr. Reed, the Chief Steward, and others. By the time I had become acquainted with all these men I began to feel that my study of Southampton Island was one of the activities of the great Company itself; that I was in some pleasant way connected with them in their work of understanding, helping, and harnessing the tremendous wilderness of "the North Country."

The officials of the Canadian Government at Ottawa, who procured for me various permits for collecting natural history specimens, were very courteous. Among these men were Mr. O. S. Finnie, Director of the North West Territories and Yukon Branch of the Department of the Interior: Mr. J. B. Harkin, Director of the Canadian Parks Branch of the Department of the Interior; Mr. Hoyes Lloyd, Supervisor of Wild Life Protection for the Department; Dr. R. M. Anderson, Chief of the Division of Biology of the Canadian National Museum; and Mr. Percy A. Taverner, Chief of the Division of Ornithology of the Museum. Dr. Anderson was especially helpful in giving me references as to reports on the various explorations which had been made on and about Southampton, and Mr. Taverner has been most painstaking in helping me in the preparation of the present manuscript, in checking identifications, loaning material, and permitting the use of his own data.

I could have made little progress at Southampton without the help of my good friend Mr. Sam Ford, Chief Trader of the Hudson's Bay Company, with whom I lived while at the Post at Coral Inlet. At the first word of greeting from Sam Ford I knew he and I would be friends. He told the Eskimos what I wanted and labored heroically at interpreting for them my involved scientific discourses. He went with me to Cape Low, and helped in all sorts of ways, in managing the motor-boat, in cooking meals, and in shooting specimens. Sometimes I think that Amaulik Audlanat and I actually owe our lives to Sam Ford; for had he not on our trip to Cape Low somehow kept himself from becoming seasick on a certain stormy day, we three men might have drifted to Coats Island in our damaged boat, never to return. I have no desire to make these dangers appear graver than they were, but the moods of the North Country are not always gentle, and the combination of a broken propeller, a small boat, and high off-shore wind is not a good one along the shoal southern coast of Southampton Island. Sam Ford's assistance took many forms. He helped me outfit my sub-expeditions; he drilled me many a night during the winter in the Eskimo language; he helped me in my trapping and photography; he took care of specimens which natives brought in while I was away; he went over his diaries with me and gave me recollections of trips he had taken over and about Southampton and on Coats Island. But Sam Ford helped me chiefly because during the long winter he was always friendly, always patient, and uncommonly considerate.

Mr. Ford's son Jack, one of the blithest young men in the North Country, was my all but constant companion. Jack helped me in everything—absolutely everything from difficult interpreting down to sewing on buttons. He was a keen observer, enjoyed hunting and trapping greatly, and seemed to derive keen pleasure from aiding me in this scientific survey of his "home island." Jack and I took never-to-be-forgotten dog-team trips in winter; he accompanied me to Seahorse Point, where he shot Polar Bears, while I chased ravens; we two went swimming and diving together in the chill waters of the Inlet much to

the amazement and amusement of the natives; and in the spring two of my most important trips were satisfactorily accomplished largely because of Jack's enthusiastic, untiring assistance.

Chief among the Eskimos who helped me was Amaulik Audlanat,[1] the sturdy, capable Aivilik known as "John Ell." John had had much contact with white men and knew a good deal of English. He went with me to Cape Low, to Seahorse Point, to East Bay, and to the floe south of Bear Island. We became great friends. Not only was John an expert mechanic, boatman, huntsman, dog-team driver, and igloo-builder, but he was also a keen player of games, a companionable and strong man. Much of the success of my expedition was due to Amaulik's ability and knowledge. He took care of my guns, helped me in taking pictures, skinned caribou, walrus, and seals for me, and kept me comfortable, while we were together in the field. John told me many interesting Husky stories. He was always gentlemanly. He never became excited, even when circumstances appeared to warrant tumultuous anxiety.

The intelligent Eskimo, Tommy Bruce, was also very helpful. Tommy and I, with our dog-team, started to cross the high country north and east of the Post in an attempt to reach Fox Channel, where we expected to find White Gyrfalcons nesting. We had a splendid time together, even though our trip in large measure was a failure. Tommy Bruce undertook the special Cape Kendall Blue Goose sub-expedition for me in June, and was successful in securing both birds and eggs, as well as many very interesting data.

Muckik, Kyakjuak (or "Curly Joe"), Pumyook, Kooshooak, Shookalook, "Cabin Boy," Eevaloo, Angoti-Marik ("Scotch Tom"), Akaook, Keetlapik, Noah, all of them brought me specimens, or helped me in one way or another. One of my most delightful companions was young Santiana, Amaulik's son, who went with me about the Post, cleaned blood from bird-plumage, drove the dog-team, located nests, and collected bumblebees. Santiana was always cheerful and willing, though he did not clearly understand why specimens of mosquitoes should be laid out in state on white cotton together with less common and less bothersome insects.

The Roman Catholic Missionaries at the Post, most amiable and scholarly men, Fathers A. Thibert and Eugène Fafard, helped me in many ways, and were most hospitable, making me welcome at their Mission at any time and letting me play their little organ. Father Clabot took Father Thibert's place late in the summer of 1930.

The staff of the Carnegie Museum were most courteous in helping me pack my outfit during the hot days of July, 1929, and in working with me in arranging the collections upon my return. Dr. Andrey Avinoff, Director of the Museum, spared no pains in sending me off well equipped. Mr. Graham Netting, Curator of Herpetology, directed the unpacking of the collection for me in masterful fashion; and Mr. R. H. Santens, Dr. O. E. Jennings, Dr. Hugh Kahl, Mr. John Link,and Miss Maud Gittings all helped. I want to thank Mr. W. E. Clyde Todd, Curator of Ornithology of the Museum, in particular: first, for taking me on his earlier northern trips "down" the Labrador and into Hudson Bay; second, for being so unfailingly accurate and painstaking in all his work as to be a constant inspiration to me; and third, for his assistance in my various problems connected with the identification of material, in looking up references in little-known literature, and in loaning specimens.

Mr. Bayard H. Christy of Sewickley, Pennsylvania, Editor of *The Cardinal*, put himself to considerable trouble in helping me ascertain the status of Southampton Island on the earlier maps, and in determining the source of the name Southampton.

[1]Mathiassen (1931, pp. 11 and 12) refers several times to an Eskimo named Autdlanâq. I am practically certain that Autdlanâq and Amaulik Audlanat are one and the same man.

Captain George Comer, of East Haddam, Connecticut, has told me much about the whaling activities in Hudson Bay, and has permitted me to go through all his numerous Southampton diaries.

Colonel L. A. Luttringer of Harrisburg, Pennsylvania, and his son, Leo A. Luttringer, Jr., were of great assistance to me before I left for Southampton. Colonel Luttringer presented the Expedition with a most useful canvas blind for photographic work.

The Scranton Bird Club of Scranton, Pennsylvania, proved their interest in the Expedition by donating a considerable amount of photographic equipment. I wish, also, to thank Mr. and Mrs. Francis Hopkinson Coffin, of Scranton, for the outward expression of their interest. Mr. Kenneth Doutt, at present in Berkeley, California, gave me a good tripod and an excellent field-kit. Mrs. Elsie Singmaster Lewars, of Gettysburg, Pennsylvania, and Colonel E. J. Stackpole, Sr., of Harrisburg, gave me articles of trade for the Eskimos. The Girl Scouts of Harrisburg gave me boxes of attractive jewelry for the Eskimo children. All these expressions of interest helped me more than I can say.

Dr. Arthur A. Allen of Cornell University, Ithaca, New York, has been a constant source of inspiration to me as I have worked upon this paper.[2] Drs. A. H. Wright and W. J. Hamilton, also of Cornell, have helped me in every possible manner. Mr. E. R. B. Willis, Associate Librarian of Cornell University, has helped me in securing from various libraries such books and periodicals as I needed to consult.

I wish here publicly to thank Radio Station KDKA of Pittsburgh, for devoting so much time during the winter to broadcasting messages to me from my friends. These messages came at a time when they were most needed. And some of them were of considerable importance to the expedition. Mr. Louis L. Kaufman, who broadcasted many of the messages, was cheerful and companionable in all that he said, as were also his fellow announcers. My mother, Mrs. H. T. Sutton of Bethany, West Virginia, played for me on the piano; Dr. Arthur W. Henn, of the Carnegie Museum, undertook the matter of seeing that messages were sent to me from my old associates; the Bethany College Orchestra, under the direction of Dr. B. R. Weimer, and a quartet from the Psi Chapter of Beta Theta Pi at Bethany gave me a delightful musical program in December. Hundreds of messages came to me during the winter: proof of the interest of my friends in my personal welfare and the success of the scientific enterprise. For all these expressions of friendship I was, and am, deeply grateful.

Lastly, and lastly only because we are soon to begin the paper itself, I wish to express my feeling of indebtedness to Dr. William J. Holland, Director Emeritus of the Carnegie Museum, for sympathetically editing my manuscript. Dr. Holland is a friend of long standing. While on Southampton I thought of him again and again, as I chased butterflies, which I hoped he might one day see. If the present volume is to be "of good report," its state of well-being will in no small measure be traceable to Dr. Holland's careful editorial supervision.

[2]Part I, Sections I, II, and III; and Part II, Section II of the present volume of these Memoirs were prepared by the author as a thesis for presentation to the Faculty of the Graduate School of Cornell University in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

SECTION 2—GENERAL INTRODUCTION

DESCRIPTION OF SOUTHAMPTON ISLAND

Geographical Position

Southampton Island lies at the mouth of Hudson Bay, directly south of Melville Peninsula, almost directly west of the southern part of Baffin Island, and east of the Chesterfield and Wager Inlet region of the mainland of northeastern Keewatin. The Island is roughly an equilateral triangle, with its apex pointing toward Repulse Bay, its eastern side bounded by Fox Channel, its base by Evans and Fisher Straits, and its western side by Sir Thomas Roe's Welcome. The long, narrow Coats Island lies not far to the southeast; and Mansel Island is not much farther away to the east and south. Southampton is considerably nearer to the western shore of Hudson Bay than it is to the region of Cape Wolstenholme.

Cape Frigid, the northernmost point of land on White Island, which lies but a short way north of the main body of Southampton, is a little north of Latitude 66° N. Cape Munn, the northernmost point of Southampton proper, is a little south of Cape Frigid. The southernmost point of the Island, in the region of Cape Low, is virtually at Latitude 63° N. The Island is therefore at about the same distance south of the North Pole as are Nome, Alaska; Iceland; the White Sea; and the southern part of Greenland.

Southampton is directly north of the State of Michigan. Seahorse Point, the easternmost point on the Island, is but little west of the 80th parallel, and Cape Kendall, the western extremity, is a little west of the 87th parallel.

Area

Low (1906, p. 114) states that the area of Southampton is 19,100 square miles. I am not sure whether this estimate includes White Island to the north, Walrus Island and other islands in South Bay, and the islands at Seahorse Point. Munn (1919, p. 52) says that the Island is "about 20,000 square miles in extent." The Island has an area, therefore, roughly half of that of the State of Pennsylvania.

Boundary Waters

Fox Channel, the body of water to the east, separates Southampton from Baffin Island, the nearest point of which is about 100 miles northeast of Seahorse Point. Frozen Straits, to the north, are not very wide, and the distance from the Duke of York Bay region or the northeastern edge of White Island across to Vansittart Island is so short that this channel sometimes freezes across in winter. Sir Thomas Roe's Welcome, to the west, varies from about 25 to 70 miles in width. Fisher Strait and Evans Strait to the south are narrowest just north of Cape Préfontaine on Coats Island, which point is perhaps thirty miles from Leyson Point on Southampton. To the southwest of Cape Low the open waters of Hudson Bay reach out for several hundred miles; and Fox Channel extends to the northeastward about four hundred miles toward the upper part of Baffin Island. Seahorse Point is roughly one hundred miles from Cape Wolstenholme.

Physiography and Topography

By far the most extended discussion of the physiography of Southampton Island has been given us by Mathiassen (1931, pp. 13-23), whose account has been written in great detail.

Briefly, the eastern third or half of the Island is much higher and rougher than the western portion. Along the entire Fox Channel frontage the land rises abruptly. Here there are gulches, cliffs, and fjords. At Seahorse Point there are spectacular cliffs which appeared to me to be about three hundred feet high, rising sheer from the sea. Mount Minto, which is said to be the highest point on Bell Peninsula, the southeastern corner of the Island, is, according to some writers, 1050 feet high (see Comer, 1910, pp. 84-85). The Porsild Mountains, so named by Mathiassen in 1925, are said to "reach up to about 500 M. [1600 feet] above the sea" (see Mathiassen, 1931, p. 19). These mountains form a sort of ridge, which is parallel to the Fox Channel shore-line, and of which Mount Minto is the southeastern extremity, and White Island a northern portion, cut off from the rest of the range by Duke of York Bay. At the Post, at the head of South Bay, the terrain is neither especially rugged and high, nor especially flat. To the eastward extend rocky ridges, which loom up in the distance as a considerable blue-violet wall; to the west the land rolls off in gray and brown monotony toward Cape Low. At Native Point there are rather high gravel-ridges or mounds, and at many places along the southern shore between the Post and Cape Low there are noticeable bluffs, but, generally speaking, the western part of the Island is exceedingly flat. The highest land along the frontage of Sir Thomas Roe's Welcome is said to be at Cape Kendall and Manico Point (Comer, 1910, p. 85). Button, who was probably the first navigator to see Cape Kendall, though he did not give the place its present name, called it "very high Land" (Christy, 1894, p. 183); but, as noted elsewhere in the present paper, it could have appeared "very high" only by comparison, or because of a mirage, since the whole western coastal region is in reality low. Regarding the Cape Kendall region Captain Comer has made some interesting statements in his notebooks, all of which were turned over for my perusal, and from which I wish to quote here:

"This summer, 1899, we left Cape Fullerton with three boats on June 27 and landed at Cape Kendall that night. These shores are very difficult to land on and only at high tide can it be done without wading the flats extending from one to two miles off shore.

"From Cape Kendall to the Bay of God's Mercy the land is quite wet, but there is plenty of grass and flowers. There are many deer[3] too, which we found to be quite fat. Along the shores are many stone cairns for storing meats and blubber.

"There is a low piece of land two-thirds of the way from Cape Kendall to the Bay of God's Mercy, which at a distance has the appearance of a body of water extending across to the shore north of Cape Kendall and making an island. The Bay of God's Mercy does not have the appearance of being a fit place for a vessel to go, as there are many shoals far from land, especially along the north shore. It would look as though this bay were the outlet of some large stream which might drain the country inland. All to the south of this bay the country differs little. There is no grass. The land rises as one goes back, it being highest back of Manico Point, then falling off as one goes to the south. It seems to be composed wholly of small sharp stones, much of it limestone with a little flint, and some sort of larger flat stones. Many of these large flat stones have markings upon them as though bushes and small sticks had been imbedded in them while they were in a plastic state.

[3]In all of Captain Comer's notes, caribou are referred to as "deer."

"Many gulches extend down to the shore, which are probably filled by the freshets of early summer. Occasionally there are snow-banks along where the land is steeper near the shore. The flats here do not extend as far off shore, and landing can be made at low tide, but to haul a boat up, we would have to wait till high tide."

On some charts (See, for example, Comer, 1910, p. 85) are marked two "peculiar, shed-like hills," one not far west of the head of South Bay, the other not far from the coast possibly fifty miles east of Cape Low. These great mounds (both of which I have seen, though I did not ascend them) are said by the Eskimos to be of gravel: the former is inland a considerable distance from Munnimunnek Point; the latter is actually not near the coast, as shown on the charts, but about twenty-five miles inland; and the Eskimos who have seen and visited this *Noovoodlik* (as they call it) maintain that there are at least five such "hills" stretched out in a rather regular line between the region inland from Cape Kendall and this last, most southerly one, which can so easily be seen from the coast.

Bays and Inlets

The principal indentations on the eastern side of Southampton are formed by Duke of York Bay to the north, and East Bay, which is a little over fifty miles westward from Seahorse Point. Another indentation which the Eskimos *always* show in their own charts (see Mathiassen, 1931, p. 11, and Figs. 1 and 2 in present paper) as east of East Bay and north and west of Seahorse Point, may be Gordon Bay, so named by Captain George Back, but which appears not to be indicated in most of the published maps at hand.

The southern side of the Island is deeply indented by South Bay, the innermost part of which, Coral Inlet, is nearly a hundred miles north of the mouth. Along the eastern shore of South Bay are further indentations, the innermost being Coral Inlet, and the other, which is north of Native Point, being called Native Point Bay, Big Rock Bay (an Eskimo appellation) or "Shallow Bay" (see Comer, 1910, p. 85).

At the southwestern corner of the Island, lying between Cape Low and Cape Kendall, is the large Bay of God's Mercy, named by Lyon. Into this bay flows the Boas River.

Rivers

There are only a few relatively large streams: the Cleveland River, which drains northward into Duke of York Bay (see Mathiassen, 1925, p. 562); the Kirchhoffer, which drains southward into the western shore of South Bay, and which plunges over a fifty-foot fall (Kathleen Falls) near its mouth (see Munn, 1919, p. 53); the Boas, which flows southwestward into the Bay of God's Mercy; and the Thomsen, which, according to Mathiassen (1931, p. 21) "has a rather big flow and drains the big Hansine Lake . . . [in] a continuous chain of whirlpools and broads."

Among the somewhat smaller streams, which are raging torrents in the spring, are: 1. The Canyon River which flows northward into Mathiassen's Foengselsporten (Mathiassen, 1931, p. 19), the valley of which is "a pronounced canyon, of deep ravines, through which the river forms high waterfalls with vertical, sometimes overhanging walls, alternating with more open sections." 2. The Anderson River (named in the present paper), which flows southward into Evans Inlet in the region of Leyson Point, and which has cut a deep gorge into the limestone not far from its mouth. 3. The Ford Rivers (named in the present paper), which flow westward from the region of Itiujuak into the head of Coral Inlet. 4. The Ranger or Kashigiak River, which empties into Fisher Strait not far east of Cape Low.

5. Two salmon-streams, one of which flows westward into Sir Thomas Roe's Welcome (probably the Murray River of Mathiassen, 1931, map), and one eastward into South Bay. 6. The stream known among the Eskimos as the Koodlootok, which flows southward into South Bay not far west of the Post, and which in my opinion has nearly the position of the Kirchhoffer River, as shown in Mathiassen's map (1931, chart).

Lakes

All along the shores of Southampton Island, and presumably, though somewhat less abundantly, inland, are innumerable lakes, varying in size from tiny ponds, most of which are shallow, even marshlike, to magnificent bodies of water such as those northeast of Itiuachuk, and west of Duke of York Bay. This latter is so extensive that, according to old Shoo Fly[4] and others, one can "walk a day along its western shore and yet not reach the end." This body of water is doubtless the Hansine Lake of Mathiassen (1925, p. 562). Other large lakes occur at the headwaters of the Koodlootok River (perhaps Mathiassen's *Darkness Lake*); northeast of Cape Low; inland from Sir Thomas Roe's Welcome; and to the southwest of Duke of York Bay. The lakes in the Seahorse Point region, and indeed all along the shore of Fox Channel, are not, as a rule, very large. Those at the head of South Bay are all small or medium-sized.

Offshore Islands

The largest island among those which lie close to Southampton is White Island, to the northwest of Duke of York Bay. This considerable body of land was probably first seen by Middleton at the time he named its northernmost extremity "Cape Frigid." The island is probably between forty and fifty miles long and about ten miles wide (according to Comer's Chart) and extends in a northwest-southeasterly direction. It is separated from the main part of Southampton by a narrow "Boat Channel" called "Comer's Strait" on some charts (Mathiassen, 1931), a name, which according to the word of Captain Comer himself, was first given by Captain J. E. Bernier. At the northwestern end of White Island are several small islands, upon one of which Hall once stopped for a short time. At the southeastern end, not far from Cape Deas Thompson, are the so-called Nias Islands, and the Black Rocks. The highest point on White Island is Mathiassen's Mount Tantalus (552 feet).

The island, which in my map I am naming Tooktootok (Aivilik Eskimo word for "Place of Caribou") is a fair-sized body of land, possibly six miles long and four wide, lying not far from the main shore just north of East Bay. In most charts I have seen this island is shown as much larger than it really is. Near the island are several small, low islets.

The peninsulas now known as Bell Peninsula and Gore Point were once thought to be islands, but their insularity has long since been disproved (Comer, 1910, p. 84).

There are several small islands in the Seahorse Point region which were discovered and charted, though not named, by Baffin, in 1615, though curiously enough they have disappeared from more recent maps. That these islands do exist I myself know, for I have seem them all and have been on or across some of them. The largest is that upon which Seahorse Point itself, apparently, is located. At low tide this island is almost joined to the "mainland" by a narrow ridge of gravel. The other islands are farther offshore. Two of these, which appear to be quite high, with more or less precipitous shores, are to the northward of Seahorse Point, and three others lie just northeast of the Point. These islands will

[4] I have not ascertained the native name of the Eskimo woman, who was called *Shoo Fly*.

be more minutely described later. I propose that the single island at Seahorse Point should bear the name of George Back, who wintered thereabouts with his crew in the *Terror;* and that the two most northerly islets be named after William Baffin, who named Seahorse Point, and that the three most easterly islets should be called the Semple Islands, after Mr. Semple, who made possible the expedition upon which I am reporting.

There are several islands in South Bay, the most important of which is Walrus Island, which lies in Lat. 63° 17′ (Comer, 1910, p. 84) about sixty miles south of the Post. While Walrus Island is not large, nor particularly high, it is nevertheless rather a striking, cliff-like mass, and it contrasts strongly with the flat shores of the portion of Southampton nearby.

Bear (or *Bare*, the latter, preferably, I should say) Island is a low, uninteresting pile of gravel lying about seven miles south of the Post. It is scarcely more than a quarter of a mile across, though it is shown in most charts as at least three miles in length. Guard Rock, and two other small islands along the western shore of South Bay are also very much magnified in all the charts at hand; and one of these (see Munn, 1919, chart), which is, in reality, two islands, should certainly be called *Tern Islands*, since Arctic Terns are abundant there.

Yet one more island is to be found along the southern shore of Southampton. This one is located east of Native Point. The Eskimos call it Kikkuktowyak.[5] It is an important breeding-ground for the Northern Eider and Old-squaw Duck.

There are apparently not any islands along the western shore of Southampton. Captain Comer has definitely disproved the existence of Tom's Island in Sir Thomas Roe's Welcome (1910, p. 84), but he discovered and described a dangerous reef north of Cape Kendall, which he thinks may have been taken for an island by the earlier navigators.

The water all along the southwestern shore of Southampton is exceedingly shoal, and harbors are few. In the Seahorse Point region the water is deeper and there are many shelters and coves. According to Amaulik Audlanat, who has circumnavigated the Island, the northern and northeastern shores are furnished with suitable harbors, so that navigation thereabouts is comparatively easy.

GENERAL HISTORY OF THE DISCOVERY AND EXPLORATION OF SOUTHAMPTON ISLAND

Henry Hudson in 1610 discovered the great bay which today bears his name; but it is not clear from the records of his voyage whether he reached or saw the western coast of the bay proper, and it is doubtful that he ever saw any part of Southampton Island. Hudson's own diary of this, his last, ill-fated journey, stopped just after his ship, the *Discovery*, had sailed through Hudson Strait, near Cape Wolstenholme, and past a cluster of islands, the nearest headland of which he had named Cape Digges. The record of the rest of the voyage was kept by "one Abacuk Pricket," and the veracity of this record, which is incomplete, has apparently been open to considerable question (see Barrow, 1818, p. 189). Prickett makes no mention of land seen anywhere during their fall journey from the vicinity of Digges Islands to the region of James Bay, so it is likely that the *Discovery* stood so well out to sea that no glimpse of Southampton was caught by the crew. Miller Christy, in a footnote to an Appendix (covering a charter granted to the Company of the Merchants Discoverers of the North-West Passage, June 26, 1612) to his *Voyages of Foxe and James to the North-West* (1894, p. 642) suggests that Southampton Island was named by Hudson or Button. I cannot find why Christy believed that Hudson may have had anything to do

[5]The word *Kikkuktowyak* means merely "a small island."

with the naming of the Island, or indeed with the giving to any land in the region the name of Southampton.

Captain Thomas (later Sir Thomas) Button, equipped with two ships, the *Resolution* and the *Discovery*, navigated the west coast of Hudson Bay in 1612 and 1613, and it is very likely that Button first saw or touched upon Southampton. Unfortunately, and "for reasons one cannot well comprehend" (see Barrow, 1818, p. 196), the personal record of Button's voyage was never published. Certain verbal information and abstracts taken from Button's own journal by Sir Thomas Roe were published some years afterwards by Foxe (1635, p. 117) and from these we know something of the movement sof the expedition. Button purposed to follow the track of Hudson. After passing through Hudson Strait, however, he proceeded directly to the westward where he made "the southern part of a large island, which in some charts is called Southampton Island, and to which he gave the name of Carey's Swan's Nest" (see Barrow, 1818, p. 197). The island upon which he touched was not, of course, Southampton, but rather Coats Island, the large island just to the south of Southampton. It was not until the following year that Button actually reached Southampton. After wintering at the mouth of the Nelson River, he proceeded northward, in the spring of 1613, along the "eastern coast of America," and eventually ascended what is now known as Sir Thomas Roe's Welcome to about the latitude of 65° N. He then turned back to the southeast and explored along the western side of Southampton Island.

The first land he saw on Southampton according to Christy, was "probably Cape Kendall" (1894, footnote, p. 183). I entertain some doubt as to Button's having seen Cape Kendall at this time, for the land he describes as "faire by him, bearing E. S. E. [was] very high Land" (from Foxe's narrative of Button's voyage, as quoted by Christy, p. 183) and it is now known that Cape Kendall, while admittedly higher than Cape Low, could hardly have been bold enough to merit being called "very high," unless there were a mirage. This first-seen point of land Button apparently called Cape Phillips, since this name appears at about the position of the present Cape Kendall on Briggs' map in Purchas (p. 177).

After moving southward and eastward far beyond the vicinity of his Carey's Swan's Nest, Button came upon "islands," which he called "Mancel's Islands," the land subsequently referred to as "Mansfield's Islands" (see Barrow, 1818, p. 200) and which is now known as Mansel Island. From here he again turned north, and came once more to the southern shore of Coats Island, to Carey's Swan's Nest. Here he named the extreme point of land to the west as Cape Southampton and the extreme point to the east as Cape Pembroke; which names (it may incidentally be remarked) do not appear on Baffin's map of the region, which was published in 1615.

In Button's journey northward into the strait now known as Sir Thomas Roe's Welcome, he did not go far enough to enter Frozen Strait, north of Southampton; nor did he, in returning southward, find the channel now known as Fisher Strait, which leads between Southampton and Coats Island. Evidently he did not know, either that Southampton was separated from the mainland at the north, or that his Carey's Swan's Nest was located on an island distinct from that upon which he had discovered and named his Cape Phillips.

Button gave the name Southampton to the cape west of Carey's Swan's Nest in honor of "our right trusty and well beloued Cozen, Henry, Earle of Southampton," but I cannot find the definite authority for Miller Christy's statement (*Voyages of Foxe and James*, Appendix D, footnote, p. 642) that Button (or Hudson) named any island, or indeed any land of any sort aside from this Cape, in honor of the Earl of Southampton.

It is quite possible that, with the naming of Cape Southampton, this name gradually

came into general use as a title for the body of land later known to extend north of Southampton Cape. The region may even have been called Southampton Land, before it was known to be an island. One map, indeed, tends to make this possibility seem plausible. This map was that which illustrated Daines Barrington's *Possibility of Approaching the North Pole Asserted* (1818), on which Southampton Island is called "Southampton Land."

Fite and Freeman's *A Book of Old Maps* presents a reproduction of one of the Purchas maps (p. 128) on which Southampton Island is shown as a peninsula projecting from the continental mass and labelled as "*Caries Swanes Nest.*" "*C. Southampton*" and "*C. Pembrook*" are named. The accompanying text reads: "Sir Thomas Button, guided by two of Hudson's crew, spent the winter of 1612-1613 on Hudson Bay searching for the lost leader. He named *Porte Nelson* and Nelson River in honor of his mate who died there, and scattered about several other English names . . ."

I have not ascertained that Button actually gave the name *Southampton Land* to any region, but the inference that he was indirectly responsible for the name becomes a practical certainty in view of his having named "Cape Southampton" and in view of the fact that no other explorer is known to have given the name Southampton to any land or sea-area in this region.

White's statement that the name Southampton was given by Foxe is probably an error (1910, p. 439), since I cannot locate any reference to the naming of Southampton Island either in *The North-West Fox*, or in Christy's *Voyages of Foxe and James.*

In 1615, Robert Blyeth (see Barrow, 1818, p. 206) or Bylot, with William Baffin, as mate and associate, again reached Southampton. Sailing westward from Salisbury Island and the islands they named "*Mills Islands*," they ran into treacherous ice-filled waters where the currents were strong and where the ice threatened at any moment to destroy them. Baffin, who kept a careful record of the journey, wrote of this experience: "but God, which is still stronger then either ice or stream, preserved us and our shippe from any harme at all." They were then just east of Southampton, in the body of water known today as Fox Channel.[6] Upon sailing northwestward they found themselves breasting a steady current from the northward, and were so overjoyed at the possibility of their having found the coveted "North-West Passage," that they named the Cape nearby Cape Comfort. After sailing northward from this point they observed that the land stepped "away to the northeastward" and concluded they were in a great bay, and so, much disappointed, turned south. On present-day maps of Southampton Island is a Cape not far north of Cape Comfort which W. E. Parry (1821) named Cape Bylot "as being probably the westernmost land seen by that navigator in 1615."

As Bylot journeyed southward, he encountered many "morses" [Atlantic Walruses] on the ice. In Baffin's journal we find this statement: "By eight a clocke we were come to this southern point, which I called Sea Horse Point, wheare we anchored open in the Sea, the better to proue the sett of the tyde" (see Markham, 1881, p. 133). I find no intimation that any of Bylot's men landed at Seahorse Point. There evidently was some discussion among the crew as to whether they should attempt to kill any of the "Morses," which were found to be very wary. Apparently after a consultation they decided to proceed direct for Nottingham Island. They took careful notes upon the tides at Seahorse Point.

It is highly interesting that on the map, which Baffin made, covering this voyage (reproduced by the Hakluyt Society, June, 1881) there are indicated at least three small islands

[6] In most modern maps the spelling *Fox Channel*, or *Fox Basin* is used; in earlier times the name of the explorer was usually spelled *Foxe*.

near the colorful flag, which is drawn just outside the Cape marked "Sea horse. p." These islands, curiously enough, are not shown in most subsequent maps, and they are entirely missing on the most up-to-date maps of Southampton which I can find. They should, however, be indicated on our present-day charts, for I have seen all and been upon some of these very islands myself.

It is perhaps strange that Baffin himself gave the name Seahorse Point (see White, 1910, p. 433), while Bylot was master of the vessel. Bylot on the other hand is accredited with naming Cape Comfort.

Mathiassen, writing in 1928 (Material Culture of the Igloolik Eskimos, p. 4), states that Bylot and Baffin saw the west coast of Southampton in 1615. Baffin's own tracing of his itinerary does not include any journeying southwest of Seahorse Point, so far as I can determine.

On Baffin's map no mention is made of Button's *Carey's Swan's Nest, Cape Southampton,* or *Cape Pembroke,* though the general delineation of the coast-line apparently agrees with Button's own charts.

In 1619-1620, Jens Munk made his way into Hudson Bay in the name of the Danes. He gave names to the various bodies of water and land which he encountered, and his charts, which were wholly at variance with known maps, "upset or distorted the whole geography of Hudson's Sea" (see Barrow, 1818, p. 231). In the course of Munk's northward travels he must almost have reached Sir Thomas Roe's Welcome, for he indicated on his chart two hitherto unknown fjords, which were probably Chesterfield (or Bowden's) and Ranken Inlets, of today. He wintered in an "opening," which he called *Munk's Winter Harbor.* According to the map illustrating P. Lauridsen's *Jens Munks Navigatio Septentrionalis,* this *Winter Harbor* was the mouth of the Churchill River. He called the country about him *New Denmark.* There is a possibility that Munk saw the western side of Southampton Island, but he certainly did not recognize it as an island, nor did he, so far as I can determine, give it any name.

In 1631, the vivid and romantically egotistical Captain Luke Foxe, who called himself "*The North-West Fox,*" made his way into Hudson Bay, hoping to follow up and further the discoveries of Bylot and Baffin. He reached *Carey's Swan's-Nest* (Coats Island) on July 20, apparently without having seen the eastern shore of Southampton Island. Sailing westward and northward "along the eastern shore of America," he discovered a small island, which he named Sir Thomas Roe's Welcome, in honor of a gentleman who had assisted him financially in his voyage. This name has since been transferred to the strait in which the island lies. There is no record of his having seen or touched upon Southampton, though he encountered and named several islands in the waters to the westward of Southampton. It is strange (as, indeed, Barrow remarks) that the "sagacious and merry Foxe," who was so eager to find the North-West Passage, "should not have persisted . . . in tracking the current [of the tide in Sir Thomas Roe's Welcome] to the northward, from whence he observed it to flow, instead of following it to the southward."

It was this Luke Foxe, who, according to White (1910, p. 439), gave Southampton Island its name. This statement I cannot verify. Nowhere in Foxe's not overly modest writings do I find any reference to his giving the name Southampton to any body of land or water. Furthermore, Miller Christy, who made a careful study of Foxe's writings, definitely accredits either Button or Hudson with the naming of Southampton Island.

Fox Channel, the mighty and treacherous body of water to the north and east of Southampton Island has been named in honor of Captain Foxe.

The Hudson's Bay Company came into being in 1670. Between the voyage of Foxe in 1631 and that of Captains George Barlow and David Vaughan, in 1719, there is scant record of any exploration in the vicinity of Sir Thomas Roe's Welcome or Southampton Island. Barlow and Vaughan, commanding the *Albany* and the *Discovery*, sailed from Gravesend for Hudson Bay in 1719, under the general command of Captain James Knight, who had been "Governor of the factory established on Nelson's River." The two ships never returned. Since no word came from these two vessels, the Company equipped another vessel, the *Whalebone*, commanded by John Scroggs, which was to search for the lost party. Captain Scroggs sailed into the Welcome as far as 64° 56′N. in 1723. A brief abstract of the voyage was published by Mr. Arthur Dobbs. It was only in 1767 that Joseph Stephens in the *Success* discovered that the *Albany* and her sister-ship had been wrecked at Marble Island, where their hulks were found in five fathoms of water. On shore were the ruins of a frame house; many graves, some rifled by wolves; guns, anchors, cables, an anvil, and other things valueless to the Eskimos, who said the party had miserably perished of starvation.

Certain authors have stated that the Hudson's Bay Company, in attempting to monopolize the trade among the natives, discouraged all exploration to the north of Churchill or the "extending [of] their trade that way for fear they should discover a passage to the western ocean of America, or tempt by that means the rest of the English merchants to lay open their trade . . ." (see Arthur Dobbs, 1744, p. 48). The above passage, which was quoted by Barrow (1818) included the following footnote (p. 280): "There can be little doubt that the Hudson's Bay Company were for a long time exceedingly jealous of their monopoly; and that they naturally discouraged all attempts at northern discovery, and withheld what little information came to their knowledge; but of late years the Governors of this Company have liberally communicated whatever information may have been sent to them respecting the geography or hydrography of Hudson's Sea and lands adjoining. . . That their servants have not been very active in collecting information is quite true; but the fault is rather to be ascribed to the individuals than to the Company."

The work of this great Company in the North Country merits far lengthier treatment than I can present here. Their interest in procuring raw furs led them to establish Posts in most inhospitable regions. They formed mutually helpful contacts with natives in the remotest places. They always have been deeply interested in exploration and in scientific research. That they were at an early date interested in advancing the knowledge of the geography of Hudson Bay is evident from the expeditionary work they inaugurated and carried through. One such expedition, organized in 1737, was to examine "the eastern coast of the Welcome [Southampton Island] to the north of their settlements." No proceedings of this expedition, which was performed by two small vessels, were ever published. But the findings of Foxe, Button, and Scroggs, as regards the set of the tide from the northward, were corroborated.

In 1742, Captain Christopher Middleton, representing the Hudson's Bay Company, voyaged northward into Sir Thomas Roe's Welcome in the *Furnace*. He discovered the Wager River with its Inlet. To the eastward he sighted a Cape, which, believing it to be the northeasternmost corner of the continent of North America, he named *Cape Hope*. The next day, however, he found he could not proceed more than a few miles to the eastward without being blocked by vast fields of ice, and the body of water, which he viewed from an eminence, appeared to be a "frozen strait," which obviously could not be navigated. Middleton was thus the first explorer to discover that Southampton was cut off from the mainland. But it is not evident from his writings that he was precisely aware of this fact,

nor does he at any point refer either to Southampton Land or to Southampton Island, so evidently he did not attempt to give the region a name.

He named *Repulse Bay*, however, in commemoration of his failure to find the long sought North-West Passage; he gave the name *Frozen Strait*, because "it was all froze fast from Side to Side and no appearance of its clearing this Year." The northernmost point on Southampton for obvious reasons he called *Cape Frigid*. Middleton had had high hopes, but disheartened he turned southward and made his way back to England.

Middleton's failure, however, did not in the least shake public opinion as regards the existence of the North-West Passage. So deeply interested did many persons become, that a new sort of Company was organized in 1746, in which there were one hundred stockholders. From among these stockholders a "Committee" was elected. This "Committee" employed Captains William Moore and Francis Smith as commanders of the *Dobb's Galley* and the *California*; and these men were instructed to voyage once more to Hudson's Bay to seek the Passage. Moore and Smith reached Sir Thomas Roe's Welcome so late in the season that they considered it expedient to move southward before establishing winter-quarters. After some difficulties they found a suitable place at Fort York. During the following summer they made their way northward through the Welcome. Having reached Wager Inlet they spent some time trying to find a path of egress toward the north and west; failing in this, they sought an opening to the northward of Wager Inlet through Middleton's Frozen Strait and Repulse Bay. Though they might have continued their exploration of this Bay, they decided not to risk being caught for the winter, and accordingly started homeward on August 7, long before winter actually set in.

The highly entertaining report written by "The Clerk of the *California*" (a man who has been known as *Drage* and as *Charles Swaine*), is illustrated with several maps, two of which show Southampton Island. The first of these, presenting the Hudson Bay region according to discoveries made between the years 1610 and 1743, shows Southampton as a peninsula extending southward from the Repulse Bay region. Over the western coastal portion of this entire peninsula appears the following legend: "This is a very Barren Land of an easy Ascent nigh the Welcome, but very mountainous inland." Cape Southampton, Carey's Swans-Nest, C. Nesdrake [I cannot ascertain the source of this name], C. Pembroke, and Sea Horse Point are indicated.

A map inserted toward the end of the first volume shows Southampton as an island, but gives it no name, and to the northward of the island appears the legend "A supposed Strait." This map, dated 1746-47, may be the first one which recognized Southampton's insularity. Buache's map of 1752 also showed it as an island, named *Cary Swans Nest*. Cape Southampton is not named. The name *Southampton* seems first to have been applied to the island, as distinguished from the Cape, in Cluny's *American Traveller*, in 1769.

On Captain William Edward Parry's first voyage in the Arctic Seas (1819-20) he discovered most of the great fjords on the north coast of Cockburn Land. It was on his second voyage, however, in 1821-23, that he visited the Southampton region. On August 12, 1821, with Parry in the *Hecla*, and his second-in-command, Lyon, in the *Fury*, he decided to try to find the North-West Passage by pushing through Middleton's Frozen Strait. He found himself in ice-filled water, through which it was exceedingly difficult to sail. On that day Cape Welsford and Cape Deas Thompson were discovered and named, the latter after "one of the Commissioners of His Majesty's Navy." The ice-filled waters between and to the southwest of these points of land confused them greatly. They even thought they might be in the Repulse Bay region. On August 15, Cape Bylot was named. Here the men went

ashore. On August 18 Point Henderson was named "after Mr. Henderson," that is John Henderson, Midshipman in the *Fury* (see White, 1910, p. 379). By this time the Expedition had succeeded in tracing the entire shore-line of the body of water which lay between Cape Welsford and Point Henderson, and to this arm of the sea they gave the name of Duke of York Bay "in consequence of the Expedition having first entered it on the Birth-day of His Royal Highness" (Parry, 1828, p. 46). During the following days the *Hecla* and the *Fury* forged onward through Frozen Strait. They completed the voyage on August 21. Parry was thus the first navigator to establish definitely "the insularity of that portion of land which by anticipation has long been called Southampton Island" (Parry, 1828, p. 58). He continued his exploration in the Repulse Bay region along the east coast of Melville Peninsula and the southern coast of Cockburn Land, naming Vansittart Island on August 31 after "the Right Honorable Nicholas Vansittart, Chanchellor of the Exchequer" (p. 91), and Fife Rock on September 4, after the "Mr. Fife who first discovered it on our former arrival on this coast" (p. 97). A small island to the south of Vansittart also was named in honor of William Baffin. He spent two winters in the region; one on Winter Island to the northeast of Southampton, and one at a point called Igloolik, not far north of Chesterfield Inlet.

In 1824 Captain George Francis Lyon (who had been Parry's second-in-command), sailing in His Majesty's Ship *Griper*, touched upon Southampton several times, while attempting to reach Repulse Bay through Sir Thomas Roe's Welcome. Lyon first saw Southampton on August 22. Sailing westward from Hudson's Strait, he "saw a part of the mountains of Southampton Island very distinctly in the west." He made his first landing on August 24th to the southwest of Seahorse Point, at a place he named Leyson Point, in honor of a Mr. Leyson, the Assistant-Surgeon aboard the *Griper*. The body of water to the south of Leyson Point he named Evans Inlet after a Mr. Evans, Purser of the *Griper*. Evidently he did not know that Cape Pembroke to the south was on a separate island, for he speaks of this point of land, and indeed of other points now known to be on Coats Island, as part of Southampton. He landed on Coats Island on August 27. After leaving Coats he sailed west and north, eventually reaching a point considerably north of the present Cape Low. Here he encountered savage gales, which all but wrecked the *Griper*. The whole crew were thrown into a state of dejection. After the storm, on September 2, Lyon found himself in a large body of water, which he named the Bay of God's Mercy, in commemoration of their miraculous weathering of the storm. The point to the northward of their anchorage he named Cape Kendall, in honor of the Assistant-Surveyor on the expedition, and the point to the southward he named Manico Point, after Lieutentant P. Manico, of the *Griper*. During the gale Lyon had been unable to ascertain his correct position and had taken the point he subsequently named Cape Kendall for Cape Fullerton to the west. During the following days the *Griper* sailed westward and northward a way, then turned south and made for the "American coast," the region just north of Chesterfield Inlet. They sailed not far from Cape Fullerton and Whale Point, and in a zig-zag course eventually turned north and east, reaching Southampton once more on September 11, at a point which Lyon named after Lieutenant Francis Harding of the *Griper*, who on the previous day thought he had sighted land to the eastward.

After leaving Harding Point the *Griper* sailed north a short way and then on September 13, after weathering a terrific gale, sailed southward, having failed to reach Repulse Bay, to be sure, but being in good enough condition to make the return trip home. On the 17th of September a body of land was seen to the eastward, which Lyon named *Tom's Island*

after the Mr. Tom "in whose watch it was first discovered." It is not known just what body of land this was, since Captain George Comer, sailing near, or indeed *over* the exact position of the island in a recent year, proved it to be non-existent (1910, p. 84). In a personal letter, dated East Haddam, Connecticut, November 30, 1930, Captain Comer says: "On the old charts there was placed an island, known as Tom's Island, in what is known as the Bay of God's Mercy, between Cape Kendall and Cape Low. Instead of . . . an island there were thirty-eight fathoms of water. It is well known . . . that by keeping the land close aboard on the starboard side the current will be with you, and to my mind the men who discovered this island had actually been carried around Cape Kendall [without their realizing it] and saw the reef which lies north of it." This reef Captain Comer describes in detail in his paper (1910, p. 84).

As the *Griper* made her way toward Hudson's Strait she once more rounded, not the southwest corner of Southampton, but the western end of Coats Island, and passed northward and eastward over much the same route she had taken in making her way in about a month before.

Captain George Back in 1836 voyaged in the waters about Southampton Island, hoping to continue Captain Lyon's work (1824) in reaching Repulse Bay, or Wager Inlet. He decided upon proceeding through Frozen Strait rather than through Sir Thomas Roe's Welcome, since it was at the time considered the easier route. Back sailed on the *Terror*. On the evening of September 13 he was not far from the nearest rocks at Cape Comfort—a name which he called "most inappropriate," for he was battered and buffeted about by the winds and tides for weeks in the region between Cape Bylot and the small Baffin's Island to the north. On November 14, a harbor not far from Cape Comfort was discovered and named in honor of Lieutenant William Smyth of the *Terror*. Back and his crew had one of the most harrowing winter experiences in the annals of Arctic exploration. The *Terror* was not snugly frozen in the ice in some sheltered harbor, as is often the case when ships of necessity winter in the Arctic, but she was whirled and tossed back and forth among the restless, savage Fox Channel ice, being carried now north, now south, and drifting even as far as Seahorse Point in February. It is to the eternal credit of Back and his men that they weathered this trying season, as well as they did, though the expedition, insofar as reaching Repulse Bay was concerned, was a failure. During the course of the *Terror's* voluntary and involuntary wanderings, many places were discovered and named. The following names were given, in honor of various members of the crew: *Stanley's Harbor*, for Lieutenant Owen Stanley; *McMurdo Point*, for Lieutenant Arch McMurdo; *Gore Island*, for Robert Gore, Mate; *McClure Point*, for Robert McClure, Mate; and *Cape Fisher*, for Peter Fisher, Mate. *Gordon Bay* was named in honor of Admiral James Alexander Gordon. *Gore Island* is not an island at all, as is known from Captain Comer's comments (1910, p. 85) and from my own personal observations, but is, rather, a point; and *Gordon Bay*, which seems not to be shown in most modern maps, is, in all probability a considerable body of water.

In 1840, the Hudson's Bay Company planned an expedition which was to explore the "northern shores of America . . . between the River Castor and Pollux of Dease and Simpson, and the Strait of Fury and Hecla, as it was then very generally supposed that Boothia was an island" (see Rae, 1851, p. B, l). This expedition did not materialize, due to the unfortunate death of the man who was to lead, Mr. Thomas Simpson. A few years later, however, the Company organized another expedition under the command of Dr. John Rae. Rae set out from York Factory on June 13, 1846, with two ships, the *North*

Pole and the *Magnet*. He did not visit Southampton on his way to Repulse Bay, but he saw Cape Kendall on July 14, and made many interesting observations on the tides and ice conditions in Sir Thomas Roe's Welcome. During the duration of the expedition he made many interesting discoveries in the Repulse Bay region and to the northward, though he did not visit Southampton at all. On his return journey through the Welcome he planned to explore the western shore of Southampton from Harding Point southward, but was prevented by the ice. Rae's observations on the bird-life, as recorded in his report of the journey, are of great interest to the ornithologist.

Captain Charles Francis Hall made three voyages to the Arctic. The second of these, which extended from 1864 to 1869, interests us chiefly because he lived and studied much of the time in the Repulse Bay region. Hall's purpose was that of geographical study. His voyage to Repulse Bay was made in the *Monticello*, through Hudson Strait, south of Nottingham Island, between Mansel and Coats Islands, and then, after a digression to the south, west to the western shore of Sir Thomas Roe's Welcome and thence northward to Wager Inlet and Repulse Bay, where he wintered.

In 1865, he actually visited Southampton Island, landing on a small island near Cape Frigid on June 19, and making careful observations while there. This trip was not an easy one. He had started on June 10, and the whale-boat in which he journeyed was fearfully clumsy and slow. The region of Cape Frigid is referred to as "the bold and snow-capped mountains of the north side of Sedla (Southampton Island)." No mention is made of other trips to Southampton during the entire course of the long stay. In 1866 Hall's traveling was confined to the Repulse Bay region. During 1868 he voyaged to Lyon's Inlet, and in 1869 to King William's Land.

In sailing homeward from Repulse Bay in the ship *Ansell Gibbs* Hall passed through Fisher Strait and Evans Inlet, between Southampton and Coats Island. He may have been the first to make this passage. "Tom's Island" is marked on his chart and from the appearance of the line which indicated the voyage, the vessel must have all but brushed this "island," which has curiously enough since been proved not to exist (see Comer, 1910, p. 84)!

Some of the later North-West Passage and Sir John Franklin Relief Expeditions passed not far from Southampton. Repulse Bay was the headquarters for two of these Relief Expeditions: first, that of Dr. John Rae, in 1847-50, and 1853-54, by which the west coast of the Melville Peninsula was mapped; and second, that of Charles Francis Hall in 1846-49, wherein two sledge-journeys were made to Igloolik. Lieutenant Frederick Schwatka's expedition, as described by William H. Gilder (*Schwatka's Search*, 1881) had its headquarters near Depot Island from 1878 to 1880. Depot Island is just north of Chesterfield Inlet.

Whaling in the Hudson Bay region began in the middle of the Nineteenth Century. The first winter headquarters of the whalers were established at Marble Island, south of Chesterfield Inlet. In 1889 the *Arctic* wintered in Repulse Bay, where during subsequent years Ship's Harbor Island became a regular wintering place for the whaling ships. In 1893 Captain George Comer, an American whaler, visited the Southampton region. He landed on the Island first in 1896 in the vicinity of Manico Point, southeast of Cape Kendall. From 1893 to 1920 Captain Comer was on or about Southampton many times, often for several consecutive years. He usually wintered at Cape Fullerton on the western shore of Sir Thomas Roe's Welcome, but once he wintered at Depot Island (1893-4) and once at Repulse Bay. He never wintered on Southampton. During his 1907-09 voyage he made a special survey of Southampton, upon which he reported in the Bulletin of the American

Geographical Society of New York (1910, pp. 84-90). In this survey he allocated and named the southwesternmost point of the Island, Cape Low, in honor of A. P. Low, at that time Department Minister of Mines, at Ottawa; definitely disproved the existence of the island known as Tom's Island, which had been shown in earlier maps as south of Cape Kendall; located a new reef fifteen miles north of Cape Kendall; named and charted Coral Harbor and South Bay; and properly located Walrus Island. The map accompanying Captain Comer's paper was exceedingly useful to me; I carried it on all my sub-expeditions about the Island. His charting of the South Bay district is of particular value to those who contemplate navigating these waters. Dr. Franz Boas made a personal study of the Eskimos in the Cumberland Gulf region of Baffin Island in 1888, but did not, so far as I have been able to learn, investigate the Southampton region. The collections from Southampton Island, upon which he wrote extensive Ethnological treatises, were chiefly made by Captain Comer.

One of the most important expeditions carried on in the Southampton region was that of A. P. Low, accomplished in 1903 and 1904. Low, sailing in the *Neptune*, studied the Arctic Islands. In making his way in to winter-quarters at Cape Fullerton he passed through Hudson Strait, reaching Leyson Point on September 13. From Leyson Point the *Neptune* steamed through the ice slowly to Seahorse Point. On the following day Low returned to Leyson, then went westward through Evans and Fisher Straits. Since no ice was seen in Fisher Strait, he rightly inferred that there must be no channel between the so-called "Bell Island" and the main part of Southampton. On September 15 he passed round the southwestern corner of the Island, then made his way northward toward Cape Fullerton.

On June 15, 1904, he made a whale-boat trip to Southampton; he was accompanied by "Dr. Borden, two seamen, and six Eskimos" (1906, p. 32). It required two days to cross Sir Thomas Roe's Welcome from Whale Point to the vicinity of Cape Kendall. The party remained on the Island a week, first moving southward, then gradually working northward until they were about ten miles north of their original landing place, some forty miles beyond Cape Kendall. They reached the *Neptune* again on July 2.

In starting the summer cruise through the other Arctic Islands, Low left Cape Fullerton on July 18, steamed eastward for Cape Kendall, then southward along the western coast of Southampton. He made his way through Fisher Strait once more, passing the "small but prominent Walrus Island" and naming Cape Préfontaine, the northeasternmost headland of Coats Island. After cruising about the Arctic Islands for some time, he returned once more to Fullerton before returning to Halifax, and in leaving passed not through Fisher Strait, but to the southward of Coats Island.

Captain John Murray, a whaler from Aberdeen, Scotland, who during recent years has been Captain of the Hudson's Bay Company annual supply-ship *Nascopie*, spent three consecutive winters on Southampton Island. He first landed on the Island in August of 1902. He lived for a time in a tent made from the sail of his ship. He had no contact with the Southampton Eskimos until April, 1903. He took several Aivilik Eskimos from Repulse Bay and some Okomiut from Lake Harbor, Baffin Island, with him. He was located first at Cape Low, where in 1929 we stumbled upon some of the very barrels and instruments he had left on the beach so many years before. He voyaged for whales as far eastward as Seahorse Point, and northward to Cape Kendall and Cape Frigid. Though he made certain excursions inland for caribou, these expeditions were never extensive, and, so far as I have been able to learn, he did not preserve any charts which may have been made by members of his crew.

I had the pleasure of seeing Captain Murray daily while myself voyaging to South-

ampton in 1929, and I enjoyed talking to him, because it was plain to me that he had very much enjoyed his experiences on and about Southampton. It is regrettable that his diaries have not been published in compact form.

In 1903 a barracks of the Royal Canadian Mounted Police and a Hudson's Bay Company Trading Post were established at Fullerton Harbor; the latter in 1912 being removed to Chesterfield Inlet.

Captain Henry T. Munn landed on Southampton in September, 1916, with a small party of Eskimos, intending to investigate the minerals and the Island's possibilities as a station for getting whales, walrus, or furs. He remained there for two years, leaving in the summer of 1918. His "home" was located near the head of South Bay, not far from Seal Point. During the summer of 1917 he made several journeys inland and along the coast, and in February, 1918, took some local natives from South Bay to Sir Thomas Roe's Welcome. He reached the coast of the Welcome about half way between Cape Kendall and Cape Frigid (1919, p. 53). According to the natives he was "the first white man to cross the Island." He was trying to reach the mainland via the Welcome, but his plans were frustrated by the ice.

Munn's map shows the location of the Kirchhoffer River, which he named, and of Kathleen Falls ("50 feet") which occur near this river's mouth. Several inland "salmon ponds" are indicated, and the altitude of the mountains is suggested. According to this map, Munn travelled, presumably by dog-sled or whale-boat, about half-way down the coast from his headquarters at South Bay, to Cape Low; northward to the high country, about thirty miles; northeastward almost to Fox Channel; eastward almost to Leyson Point; and also, in a circuitous route, to Native Point, thence quite a way inland, and finally back to his headquarters. Many of the Eskimos, with whom I came in contact, remembered Captain Munn very well. I walked about the site of his "house" at Seal Point again and again and saw many of the beacons, which he had erected from stones.

Mathiassen (1931, p. 9) says: "Capt. Munn's map gives much information concerning the interior, but on his journeys he had not the facilities for exact mapping, so that it is only sketchily drawn and somewhat incorrect in places."

In 1921 the Hudson's Bay Company established a Trading Post at Repulse Bay. Between the years 1919 and 1924, certain trapping activities were developed and a Post established on Coats Island, but this Post was abandoned with the establishment of the Post on Southampton Island in 1924.

In the meantime important geographical work had been accomplished by the Fifth Thule Expedition in charge of Dr. Knud Rasmussen. The headquarters of this expedition were established at Danish Island, near Vansittart Island, not far north of Southampton. The member of this expedition who came to, studied, and mapped part of Southampton was Therkel Mathiassen, now of the Danish National Museum at Copenhagen. Mathiassen voyaged to Southampton from Repulse Bay by whaleboat in August, 1922, expecting to carry on a brief archeological study. He landed in the Duke of York Bay region and made considerable excavations at a place called Kûk. He had expected to return promptly to headquarters at Danish Island, but was prevented from leaving the Island by the masses of drifting ice. With his Greenlandic interpreter, Jacob Olsen, he went on excavating at Kûk, explored the northern part of Southampton and the nearby White Island, spent the month of October at a Salmon Pond near Kûk, and moved about with the Eskimos, living as they did. In the fall he moved "across country to the lower Kirchhoffer River, staying there during the winter." Thence he "took a trip to South Bay. The return was made *via* the

Kirchhoffer River and along the coast east of Cape Bylot" (1925, p. 559). The region he visited during winter was not far from the site at which the Hudson's Bay Company established their trading-post two years later at the head of South Bay. Mathiassen did not, I understand, have a very pleasant sojourn on Southampton. Food was scarce, he became ill, he had not come prepared for a protracted visit. In February, 1923, the ice of Frozen Strait became solid enough to permit a sledge to cross from Danish Island and he and his interpreter were providentially rescued.

The map which illustrates Mathiassen's article in *The Geographical Review* (1925, facing p. 562), and that accompanying his *Contributions to the Physiography of Southampton Island* (1931, inserted) indicate that in the course of his work on the Island he charted much of the north central part, all of White Island to the north, the region surrounding Duke of York Bay, and much of the interior almost as far south as South Bay. On these maps appear some new names, which he gave the various places which he visited: the *Porsild Mountains*, the *Cleveland River*, and *Comer's Straits*. And on the map illustrating "the distribution of House Ruins in the Territories north of Hudson Bay"(1925) appear also the names: *Kûk* (to the west of Duke of York Bay, a point where considerable excavations were made); *Cañon River* (a small stream flowing northward, emptying into Fox Channel near Cape Welsford); *Hansine Lake* (perhaps the "Salmon Pond" near Kûk, where Mathiassen spent the month of October, 1922); *Foengselsporten* (a small bay or harbor east of Duke of York Bay); and many interesting native names, especially in the more southern part of the Island.

In the summer of 1924 Major L. T. Burwash undertook to reach Southampton from the eastward. His account (1930, p. 61) reads: "A crossing from Queen Cape [Foxe Land] to Southampton was undertaken, but when we had reached a point within six miles of the coast, a northeasterly wind closed the floes so tightly that a landing was impossible. The wind continuing, more ice was driven in and we were beset for three days before an opportunity for a retreat to the eastward presented itself." The map illustrating this report, and showing the routes of various voyagers, gives the impression that Major Burwash actually touched upon Southampton.

In 1924 the Hudson's Bay Company established a Trading Post at the head of South Bay, just east of Seal Point. Mr. Sam G. Ford, an employee of the Company, who had passed a life-time working in the North Country, was placed in charge of the erection of buildings and of establishing the trading centre. Mr. Ford, with his wife and four children, and Mr. Alfred Copland, arrived on August 24, on the *Bayeskimo*, and proceeded at once with their work. They lived in tents until the first building, a small, frame structure (now used as a general storehouse) was erected. During the first winter they lived in the building, which is now the Company Store. The dwelling in which the Factor now lives, and where I had my own headquarters, was built in 1926. The Eskimo servants' house was built in 1927. The Roman Catholic Mission building was erected in 1925 by Fathers Du Plaine and Girard. The Anglican Mission building, which has just recently been completed, was started in 1927. Mr. Ford, who had a motor-boat, the *Robert Kindersley*, during his first year, and other boats since, has been on Southampton continuously since 1924, save during 1927-28 when his health demanded expert attention and it was necessary for him to go "outside."

Mr. Ford travelled about the Island considerably during this time. In 1924 he did not make any extended trips either by motor-boat or dog-team; but he journeyed considerably about the South Bay region, and once went as far away as Native Point. During 1925 he made a difficult and memorable trip across land to Duke of York Bay and thence by boat to Repulse Bay, to get supplies. The Hudson's Bay Company supply-steamer, *Bayeskimo*,

was wrecked and sunk before it had discharged supplies at Southampton that year, and the emergency supply-ship *Peveril* had not been able to get in to northern Hudson Bay, because of the masses of ice. Mr. Ford and his family were faced with starvation, unless food could be got from Repulse Bay. He set out with four dog-teams on May 2, and made his way west of the Porsild Mountains to Duke of York Bay. He had with him as provisions, ten bags of flour, two hundred pounds of sugar, two chests of tea, and so forth; food for the dogs; and a very heavy boat. On each of the four sleds was loaded about half a ton of supplies. In each of the teams were seven or eight dogs. Several Eskimos went along as drivers. Progress was very slow, especially in view of the lateness of the season. He reached Repulse Bay on May 16, and remained there for five days. He finally got back to the Post by the first of June, with enough provisions to see him and his family through until the coming of the supply-ship in the following summer.

Since 1924 Mr. Ford has been to East Bay at least twelve times, and on some of these trips he went as far as Mount Minto. During April, 1928, he went to Cape Low by dog-team. While there he saw great nesting colonies of Lesser Snow Geese. During the course of his travels he determined many interesting facts about the Island. He learned, for instance, that the so-called boat-channel between White and Southampton Islands is navigable only at high tide, at least during certain seasons. He found that East Bay is indicated incorrectly on the extant charts, the head of the Bay swinging westward rather than southward. He also agrees with the Eskimos, that the coast-line in the Seahorse Point region, particularly near Mount Minto, is quite wrong on most, if not all, of the modern maps. He feels, however, that the Duke of York Bay region is correctly represented.

The chief servant of the Company's Post at Coral Inlet, a faithful and intelligent Eskimo by the name of Amaulik Audlanat (nicknamed "John Ell," after the famous pugilist, John L. Sullivan) was Mr. Ford's almost constant companion on most of his trips about the Island. Amaulik has made a good many trips by himself during the course of his hunting, and is the only man, so far as I have been able to learn, who has actually circumnavigated the entire Island. He is therefore probably better acquainted with the rough shore of Fox Channel from Cape Fisher northward, than any living man, and his comments on this country were very valuable to me.

Amaulik personally knew most of the men who have travelled about the Island in recent years and he helped many of them with their work. Among these were Captains Comer, Murray, and Munn, and Dr. Mathiassen. He helped me constantly in my hunting and exploring, and his comments on the maps made during my residence on the Island I considered of great value.

GEOLOGY OF SOUTHAMPTON ISLAND

It is obvious to one travelling over and about Southampton that the eastern part of the Island is very different in general character from the western part: the former being rough, rocky, and rather high; the latter tiresomely low and flat.

All the rough, eastern part of the Island is principally primitive or Archæan granite. I noticed a good deal of variation in color and composition of the granitic rock I encountered in travelling from the head of South Bay eastward, and the specimens gathered show differences of content, but the whole region, nevertheless, has much the same geological status. In speaking of the geology of the lands occupied by the Central Eskimo tribes, Mathiassen says (1927 a, p. 86): "Geologically speaking the territory is rather varied; low,

waving land, composed of primitive rock, forms the country south of Repulse Bay, the eastern part of Southampton Island [and] most of Melville Peninsula."

According to Low (1906, p. 190, etc.) this eastern part of Southampton, along with Coats, Nottingham, Salisbury, Charles, and Resolution Islands, the shores of the northwest part of Hudson Bay, and the southern shores of Hudson Strait are all composed of these Archæan rocks. As regards Southampton he writes: "Crystalline gneisses, schists, and granites occupy the eastern and northern parts of Southampton, extending northward from Seahorse Point to Frozen Strait at the northern end of the Island. The rocks near the junction of the Archæan with the Silurian at Seahorse Point are largely very quartzose, light gray mica-gneiss, associated with bands of rusty weathering, fine-grained mica-gneiss holding graphite in small flakes, the rusty color being due to the decomposition of small grains of pyrite disseminated through the rock. This rusty grain closely resembles that found in the vicinity of Cape Wolstenholme at the entrance to Hudson Strait, and both appear to be similar to the sillimanite gneiss of the Grenville series of Southern Canada. Both of the above rocks are cut and twisted by masses of a coarser granite-gneiss, pink to red in color, with pearly feldspar and smoky quartz. All are cut by dikes of feldspathic pegmatite containing much of the pearly feldspar."

Both W. E. Parry (1824) and Captain George Back (1836) as well as Mathiassen (*l.c.*) mention the granites and crystalline rocks, which they found in the Archæan area to the northward of Seahorse Point. Eskimos brought me specimens from the vicinity of Cape Fisher and Duke of York Bay which appeared to be basically the same as those from the Seahorse Point region, which we there personally collected. In addition to these were some very interesting specimens of a mineral approximating lignite, which the natives found could be used as fuel, though it burned poorly and sputtered a good deal. Mr. Ford himself saw a good deal of this "coal," and told me of trying to use it without much success, while on one of his hunting expeditions to Mount Minto.

Among the lighter gneisses found at Seahorse Point many appeared to be garnet-bearing, the crystals not being of great size, but having a pleasing red color, which the Eskimos naturally looked upon with a good deal of interest. I found some rocks, in which there were considerable flakings and thin laminæ of graphite. The high cliffs at Seahorse Point were particularly interesting to study, for here the various strata could easily be inspected either from the base of the cliffs or from a high point opposite to them. Certain fibrous pieces, which we found, appeared to have the structure of asbestos-bearing rock.

The mineralogical material, which Parry brought back from his explorations of the west side of Fox Channel from Frozen Strait to Fury and Hecla Strait, were identified by Jameson; and since this section of the country is geologically much the same as that of the eastern part of Southampton, the results of his examination should be of interest here. He found among the prominent varieties of rocks from this region "granite, gneiss, mica-slate, clay-slate, chlorite-slate, trap, serpentine, limestone, and porphyry." In association with these he found the following minerals: "Zircon, beryl, garnet, actinolite, tremolite, diallage, coccolite, rock crystal, calc-spar, rhomb-spar, asbestos, graphite, specular iron ore, magnetic iron ore, chromate of iron, titanic iron, and common and magnetic iron pyrites."

In the western part of Southampton, the only hills which relieve the endless monotony are the few piles of gravel, which on some charts are called "peculiar shed-like hills" (Comer, 1910, p. 85) and which the Eskimos call *Noovoodlik*. Concerning this part of the Island Mathiassen says (1927 a, p. 86): "flat Silurian limestone country composes the western part of Southampton Island and a zone along the east coast of Melville Peninsula." Low

states (1906, p. 210): "Flat-lying beds of light-colored yellow and drab limestone occupy the lowlands of the southern and western parts of Southampton Island, and also form outliers in depressions in the crystalline rocks on the north side of the island, notably at Duke of York Bay.

"A considerable collection of fossils were brought home from the beds forming the southern half of the west coast of the island. These have been examined by Dr. Ami and Mr. Lambe. . . The fossils show that the rocks contain a fauna closely resembling that of the Lake Winnepeg basin, and extend over a period from the Galena-Trenton to the Guelph and Niagara, or from the upper part of the Cambro-Silurian to high up in the Silurian.

"Soundings taken on the even bottom of Fisher Strait show that the limestones extend without a break to Coats Island . . . where they occupy all of its surface except the portion at the east end . . . where the Archæan ridge crosses it. A few fossils from Mansfield [Mansel] Island show that it also is formed of limestone of these horizons.

"At Cape Chidley [northeasternmost Labrador] a collection of fossils from loose pieces of limestone corresponds with fossils from Akpatok Island, and the direction of the ice movement out of Hudson Strait leaves little doubt that the loose limestone of Chidley came from that island. These fossils show a slightly wider range in age than the rocks of Southampton do."

This "Silurian limestone," which Low describes as "light-colored yellow and drab," is exceedingly difficult to walk upon. Broken up at the surface, as it is, into many-shaped chunks, in which little or no vegetation grows, it so rapidly wears out shoes, and in particular the Eskimo seal-skin *komiks* (boots), that it is almost impossible to keep on hand an adequate supply of foot-gear. I saw outcroppings of this limestone near Leyson Point; in fact the spectacular gorge, which the Anderson River has cut, has exposed about seventy feet of strata of this crumbling material; and the whole vast mound of Itiuachuk is composed of it. Here, on a day's walk across what appeared to be a vast desert, I covered about eighteen continuous miles of rough, angular limestone blocks, in which scarcely any vegetation grew—not even moss or lichens of any size or refreshing color.

At several places along the southern coast this limestone deposit is high enough to form a sort of bluff, wherein waves or winds have worn out caves or great hollows. One such cave of rather gigantic proportions we found and entered not far from Seahorse Point. Here the limestone was somewhat mixed with what appeared to be granite and gneiss.

Unfortunately I am not able to offer any final remarks upon the composition of the "peculiar shed-like hills" of Captain Comer's chart. Natives who have visited, or hunted bears upon these *Noovoodlik*, and Mr. Ford himself, who has been to at least one of the hills, agree that they are in reality great heaps of gravel-like, somewhat slaty pieces of rock, and are not, as might be inferred from a distant inspection, great chunks of solid rock. They may be, in fact, terminal or abrupt lateral moraines.

Walrus Island, so far as I have been able to determine, is a mass of rock with structure and composition such as is found at Seahorse Point. The height and ruggedness of this island contrast markedly with the flatness of the limestone country to the westward of South Bay.

The most memorable formations I saw at Southampton were those in a limestone outcropping near Leyson Point. Here the bottom of one of the shallow bays (Whale Cove) was almost completely exposed at low tide and I frequently waded across it while hunting shore-birds. I found the entire area to be composed of symmetrically stratified limestone, which had the appearance of gigantic, petrified cabbage-heads, the great six-inch thick leaves of the "cabbage" having been worn down and broken up by erosion, exposing the

inner layers and "hearts" in a decidedly picturesque fashion. Such a tidal flat as this was exceedingly difficult to walk upon, since the angular, slippery faces of the rock were very treacherous, especially when partly covered with sea-weed.

The whole of Southampton was, of course, covered with ice during the glacial period. This is evinced by the striæ, which may be found anywhere in those sections, where the bed-rock has held its original surface through the centuries. As regards this glaciation Low says (1906, p. 185): "The former presence of a continental ice-cap is attested along the north-western shores of Hudson Bay and in the southern part of Baffin Island, by the rounded and well polished rock surfaces, which are everywhere well marked by the ice striæ, often in several sets showing changes in the direction of the ice movements."

During past ages vast changes have taken place in the region now occupied by Hudson Bay. Low, in speaking of the "western Cambro-Silurian sea," says (1906, p. 186) that this great body of water, which represented the "maximum encroachment of the northern ocean," "filled the present depression of Hudson Bay, and extended far to the south and westward of its present limits, outliers of limestone containing fossils of this age, and very similar in mineral character, being found in the valleys of the great lakes of Manitoba. From Manitoba these rocks have been traced southward into the United States, so that at the time of their deposition the Cambro-Silurian Sea occupied a great basin open to the Arctic Ocean and extending southward into the middle of the continent."

With the rising of the land, this great sea gradually receded. Due to the great lapse of time and to the eroding of the thick ice-cap in more southern regions it is difficult to trace the shores of this sea as it receded; but it was probably at about this time that much of Southampton appeared above water. At least the western part of the Island had been under this sea long enough to permit great deposits of sediment, in which fossil remains were preserved. Southampton apparently has not been submerged since that era.

Regarding the Glacial Period Low writes (1906, p. 188): "The conditions of the land and water surfaces during the glacial period differed little from those at present, except that there has been a considerable uplift of the land, as proved by the marine terraces found along the coasts. . . . The almost equal rise of land throughout the Arctic Islands is an argument against the subsidence of the northern lands being due to the burden of the ice-cap, and the subsequent uplift due to the disappearance of that burden."

Authorities appear to agree that the gradual flow of the ice-sheet in the Arctic Archipelago was to the northward. Dawson writes (1886) "Along the Arctic coast . . . there is a considerable volume of evidence to show that the main direction of movement of erratics was northward." Tyrell's observations (1897) on the glacial phenomena of the Barren-Land region west of Hudson Bay show that the country there was intensely glaciated; that the centre of glaciation was on a nearly level plain now elevated some 400 or 500 feet above sea-level, there being no evidence to show that it was much more elevated during the period of glaciation. "The centre of ice distribution was situated close to the western shores of Hudson Bay . . . somewhere to the north and west of the head of Chesterfield Inlet. . . . As the glacier diminished the centre moved nearer the seashore, and the final stage was probably represented by the ice-cap breaking up into a number of distinct glaciers, each with a local movement of its own."

Certain of these "distinct glaciers" probably moved across Southampton; and some of them may finally have lodged there, as they subsided depositing such moraines as the hills called *Noowoodlik*, the great gravel-plateau ridge at Itiuachuk, the spectacular gravel-heap at Native Point, and similar deposits elsewhere.

Low says (1906, p. 233) that "there is a great difference in the evidence of the intensity of glacial action between the southern regions and the eastern and northern portions of the great area embraced in this report. On the shores and islands of Hudson Bay and Hudson Strait the crystalline rocks have been denuded of every trace of rotted surface material; they have been smoothed, polished and intensely striated, and their present condition is such that little or no change has taken place since the disappearance of the ice which once covered them deeply, the striæ being so fresh as to appear of the formation of yesterday."

There are on Southampton certain clam-shell deposits and "raised beaches," which suggest recent rising of the land. Low, however, states (1906, p. 275) that "the uplift which took place in comparatively recent times, geologically speaking, does not appear to be going on at present, as all the historical evidence relating to the Hudson Bay region points to a remarkable stability in the coastal regions from the time of the first records dating back to the voyage of Munk in 1619."

Present Day Erosion and Glaciation

In the high, rougher, Archæan part of Southampton, erosion appears not to be going on very rapidly today. The rocks are worn down by action of wind, rain, waves, and frost; but the granite is durable and it presents a bold, time-smoothed surface to the elements.

The gorge of the Anderson River, on the other hand is composed of rock, which is so broken up, probably due principally to the action of the frost, that large and small chunks of rock are constantly falling from the walls during summer, rattling down the talus slopes at the foot of the cliffs, or splashing into the water. I did not permit myself to investigate any of these cliffs very extensively for fear of starting an avalanche of some sort.

Along the southern shore of the Island, especially in the region of Seahorse Point and to the west of Munnimunnek Point are caverns, which appear to have been formed as the result of wave action.

All through the section of Mount Minto and along the shores of Fox Channel there are extensive snow-banks, which never entirely disappear throughout the course of the year. Such snow-banks are to be found also at Itiujuak, not more than twenty miles from the Post at the head of South Bay. One of the most interesting spots I examined was the large snow- or ice-bank east of Cape Low, which could be seen plainly three or four miles from the shore, and which was, according to Mr. Ford, about nine hundred yards wide, and which extended for some distance inland. This bed of snow-ice had much the appearance of a glacier to me, though it could hardly have been a *river of ice* in view of the flatness of the country.

CLIMATOLOGY

Travellers, who have written of their journeys across and about Southampton, agree that the weather is inhospitable and rough, and that the winters are cold. Parry, Lyon, Back, Rae, and Middleton all speak of the winds and storms, the ice, fog, and cold weather, which they encountered in Fox Channel, Sir Thomas Roe's Welcome, and Frozen Strait.

Mathiassen (1927 a, p. 86) says of the climate of the country of the Igloolik Eskimos, in general: "The climate is very severe with ice- and snow-covering during 9-10 months, winter mean temperatures of ÷35°–40° C. and prevailing northern winds with drifting snow. Extensive floes of smooth winter ice are found in Repulse Bay, Furey and Hecla Straits, and the inlets of northern Cockburn, and besides there is nearly everywhere found a narrow coast-floe."

I did not keep a year-round record of the temperature, either of the atmosphere, or of the sea-water, during 1929 and 1930. I did keep atmospheric records during most of the winter, however, and these proved to be not nearly so low as I had expected them to be. Mr. Ford told me that the winter was an unusually mild one, but that it was also unusually long, so that spring was greatly delayed.

The Eskimos recognize four, and perhaps more, seasons. Winter they call *Ookiuk*, the 'time when everything is frozen, when there is frost hanging in the air, and when the water of the sea steams.' Spring is called *Oopungakshuk*, the 'time when the first little birds arrive from the south.' Summer is known by two names, *Oopunjak*, 'Mosquito Time,' and *Aujak*, the 'time of the nesting birds.' Early fall is known as *Ookiukshak*, the 'time of the first snows and the migrating of birds.' Late fall, according to Peck, is called *Ookiak* (almost the same word as for winter) the 'time when the islands in the bays freeze shut.'

For convenience, I have decided to treat of the weather and temperature month by month, beginning with the dead of winter.

January

The Aivilikmiut call the month of January *Koobloot*, the time when "the ground cracks, making a loud sound." By the first of this month the shortest days have passed, of course, but winter holds the Arctic in an icy grip. The tundra is covered with snow varying from a blanket over the grassy prairies a few inches thick, to great drifts along the edges of the ridges, or in the gulches fifteen to twenty feet deep. All the streams are frozen shut, and their courses and banks are so buried under the snow that it is difficult to follow them. Even the largest lakes are frozen, the shallower ones a solid mass of ice to the very bottom, others, wherein dwell handsome land-locked Salmon Trout, sealed shut with a shell of ice from four to eight feet thick. Even the bays, fjords, and inlets are frozen shut, and the salt-water ice is covered with a foot or so of snow. Since these bays never freeze solidly to the bottom, the tides continue to come and go, with the result that the shore is lined with boldly broken up cakes of ice, some of them as big as houses, through which it is very difficult to journey with dog-team and *komatik*.

Due to the almost constant wind, which is usually from the north or northwest, the snow is mostly packed down firmly, so that it is possible to walk with some comfort over the tundra without using skis or snowshoes. I never once used any special foot-gear, except Eskimo boots, in walking about through the dead of winter, and I frequently covered from six to fifteen miles a day.

At this time of the year there is comparatively little daylight, of course. The sun rises in mid-morning, and after making its way through a short arc not far above the horizon, sinks from sight in mid-afternoon. Southampton is not quite far enough north for perpetual night during winter, but the days are short. Even at night, however, the tundra is rarely really dark, for the snow reflects the starlight and moonlight, and the brilliant aurora-borealis.

The temperatures at this time of the year are sometimes very low. During the first week of January, 1930, the thermometer stood most of the time at about −30° F. It was warmest during the middle of the day, of course, when thermometer readings were usually made. By three o'clock in the afternoon it always became colder. On January 5, it was −50° F. at about ten o'clock in the morning, and it got no warmer all day. At about noon a brisk wind sprang up, and the weather was bitterly disagreeable. I badly froze my nose,

cheeks, forehead, and chin. At this time of the year, when the wind came up, the loose snow everywhere began to drift, giving to the landscape a very dreary appearance.

At this time there were very few birds to be seen anywhere. Occasional flocks of Rock and Willow Ptarmigan were to be seen near the Post, and now and then a Snowy Owl. In the region of Seahorse Point ravens flew about now and then. In the open water of Hudson Bay, several miles out from the southern shore of the Island, and nearer at hand along the Fox Channel shore, some water-birds were to be seen, Mandt's Guillemots, Brünnich's Murres, and occasional eiders and gulls. Inland the Arctic Hares and Barren Ground Caribou lived on the lichens and moss, which they pawed up from the snow; lemmings ran about and nested in their endless burrows under the drifts, eating bark from the willow-twigs and seeds of grasses and plants. The numerous Arctic Foxes and Weasels, on the other hand, lived almost altogether on the lemmings, digging them from their burrows, or catching them in their warm grass nests. Arctic Wolves preyed upon the caribou herds in the region of Duke of York Bay and now and then wandered through the southern part of the Island wreaking considerable damage among the fox-traps wherever they went.

A good deal of snow falls during an average January, but the wind is so constant that this snow rarely becomes very deep in the open country. It is so cold that the water of the inlets, which seeps up through the broken ice at high tide, steams as if it were boiling hot, a weird sight indeed. Since the pelts of the foxes are now prime, the natives follow their trap-lines everywhere, moving about in luxurious ease on their dog-sleds.

There is occasionally a mild spell during January, when it may thaw for a time, or even rain. Such rain-storms occurred during the latter part of January in 1929. In 1930 the thermometer never rose above zero to the best of my knowledge during the entire month. The average temperature for the month was –32° F. The lowest temperatures were recorded on January 5 and 8 (–60° and –43° respectively) and the highest on January 11 and 27 (–16° and –3° respectively). On the "warm" days the wind was from the East; at other times the wind was almost invariably from the north or northwest.

During January, 1929, the thermometer stood below zero on twenty-eight of the thirty-one days. The average temperature for these days was –28°. The lowest temperature was reached on January 9, –60°. On the 26th, 27th, and 28th, the thermometer stood at +32°, +32°, and +30°, respectively, and there was considerable rainfall. On the 29th the weather became cold again, with a temperature of –8°.

Unfortunately no definite records of temperatures were kept during earlier years (1924-1928) at the Post, so we have no other records to offer from Southampton Island. Dr. John Rae, however, kept some records during the winter of 1846-47, while he was in the Repulse Bay country. He states that it was "very cold" during January, 1847, that it was –47° on January 7, and –72° on January 9.

February

The Aivilikmiut call this month *Ahvoonik*. This word signifies that the period lies between the "times of extreme frost," *i.e.* January and March. The weather is much the same as in January, the wind continuing principally from the north and northwest, and snow falling now and then, but rarely having any opportunity to form deep drifts, because of the wind. The days gradually become longer, of course, and the sun brighter. By the end of the month many of the days are bright and sparkling as in the finest March weather.

The edge of the coastal ice-sheet does not recede landward during this month, for the temperatures continue to be low and the wind does not blow chunks of ice in from the south

and west to break up the ice-edge or *sheenah*. There is no change in the mammal- and bird-life, unless there happens to be an unusually mild spell, when water-birds sometimes move northward, or inland.

During February, 1930, we had wind almost every day, and the thermometer never rose above zero. However, the average temperature for the month was somewhat higher than for January, being –28°. The lowest temperatures were recorded on the 4th (–40°) and the 15th (–43°). The warmest days were the 6th (–6°) and the 26th (–6°). On the 25th and 26th there was a strong southwest wind, which probably blew in enough pan-ice to break up and eat the edge of the solid ice-sheet south of the Island to some extent. During the middle of the month there were several fine, bright days.

During February, 1929, the thermometer never rose above zero. The average daily temperature was –24°. On the 16th and 17th it was only –2°, these records raising the average temperature up from –27°. The thermometer stood at –55° and –60° on the 24th and 27th respectively.

March

The month of March is called *Netchialut* by the Aivilikmiut. *Netchek* is the name for the common Ringed Seal, and it is during this month that most of the young *Netchek* are born.

As a rule, March is a gloriously bright, sparkling month. The days have become gradually longer, and the sun considerably warmer. During this month there is likely to be a good deal of snow-blindness among the Eskimos, for the glare of the reflected sunshine from the smooth snow and ice is terrific. By this time a few redpolls return from farther south. The Arctic Hares spend much of their time running along the rough ice at the edge of the frozen inlets, lying down and basking during the warmest part of the day. It is, however, still too early for the mating of ptarmigan or Snowy Owls, for spring has not yet really begun.

During the fine weather of March the sun often rises with a glorious effusion of color; and sometimes the great day-star is accompanied by two mock-suns, showing shafts of light reaching upward toward the zenith in brilliant bands. The wind is not yet frequently enough from the south to induce any considerable wearing away of the edge of the floe, but the sun is sometimes so warm as to melt the crust of the snow in sheltered places enough to give it an icy glare by evening.

During March, 1930, there was a good deal of fluctuation in temperature. The average of twenty-three days of the thirty-one (records were not taken every day) was –7°. From the 19th to the 26th, the weather was mild continuously, the thermometer lingering about +20° or +30° nearly all day, so long as the sun was bright. The coldest temperatures of the month were recorded on the 1st (–38°) and the 8th (–34°).

During March, 1929, the thermometer stayed below zero all month, with an average temperature of –18°. It was coldest during the first week, and warmest on the 16th, when the thermometer stood at –6°. In the official Post diary, fifteen days were recorded as "calm," fifteen were "drifting," and one was called a "light wind" day. Not much snow fell.

During March, in 1925, a very low temperature was recorded on the 14th (–50°); and during the winter of 1925-1926, the "worst blizzard of the season" occurred on and about March 5.

April

Among the Aivilikmiut the month of April is known as *Terriglulliut*, the time of the year when the baby Square-flipper Seals (*Oogjook*) are born.

Spring commences in April. During this month, at some time or other, the forerunners of the big flocks of Snow Buntings arrive, and other stray small birds appear now and then. The sun is now so warm that the crests of the snow-drifts melt a little nearly every day, the water trickling into tiny pools in the rocks, where it freezes by evening. The willow-buds, which protrude here and there from the snow if they have been spared by the ptarmigan and hares, begin to show a little color on the warmest days, for the sap is beginning to creep up through the roots from the humus beneath the solidly frozen crust. The numerous tracks of the hares, which cross and recross everywhere along the edge of the salt-water ice, show that these animals are beginning to mate. Even *Ookpikjuak*, the Snowy Owl, may be heard hooting an early love-song. A good deal of snow falls, and there is much wind, but many of the days are fine and splendid for travelling with the dog-team.

During April, 1930, the weather was changeable. There were many violently windy days, others beautifully calm. Upon the whole not much snow fell. The average temperature of twenty-eight days was +4° F. The warmest days of the month were the 20th and the 24th, when the thermometer reached +30°. The coldest days were during the earlier part of the month, when -6° was reached on two dates.

During 1929, the lowest temperatures were recorded on the 4th (-25°) and the 8th (-15°). The weather was very variable. The thermometer stood below zero on twenty-two of the thirty days; toward the end of the month, however, there was a mild spell. From the 25th on it never became colder than +20° and it was as warm as +30° much of the time during the middle of the day. According to the official diary of the Hudson's Bay Company there were only six calm days during the month; on eleven days it "drifted a little"; on seven days there was "hard wind"; and on six days it snowed, though on the whole there was not much snow. A good deal of the wind was from the south and southwest; on three days there was north wind, and on five days northwest wind. There was no east wind during the month.

May

The Aivilikmiut call the month of May *Nukalliut*, the time when the Barren Ground Caribou fawns are born.

By this time the days are so long and the sun so bright, when the weather is clear, that it would seem that summer ought to be at hand. But the snow lingers and the wind continues to be cold and blustering, so that the visitor from the Southland is wont to wonder whether winter will ever be over. Snow Buntings usually become fairly common before the end of the month, and others of the small birds return. Since there is a good deal of rough weather and wind from the south and southwest, the edge of the solid ice-sheet in the bays and inlets gradually recedes landward. The lakes are not yet thawing, however, and the salt-water ice, covered as it is with snow, shows no sign of breaking up. To all appearances it is the dead of winter. Yet the occasional brown feathers one sees on the head of the Willow Ptarmigan, the little tricklings of water on the ridges, where the sun warms the rocks and melts the snow, the increased swelling of the willow-buds, and the gradual baring of patches of brown grass, where the snow was never deep and where the sun has had a chance to melt away the thin crust, all suggest that spring is advancing and that summer will come someday. Some of the wildest blizzards of the year, and assuredly some of the heaviest snow-falls, are likely to occur in May. Sometimes the winter passes before the end of the month in a wild storm; but usually we must wait until June for the drifts to disappear and the flowers to come.

During May, 1930, the thermometer never dropped below zero during the day, though it usually became considerably colder at night. The average temperature for the month was +21°. The coldest temperatures were recorded on May 14 (+8°) and May 16 (+6°). During the warmest part of the day the temperature rose to above freezing many times, notably on May 18 (+36° in the shade) and during the last three days of the month (+34° in the shade). On May 8 (thermometer +20° at the Post) we heard thunder at the floe. On May 25 the first nest of a Snowy Owl was found. Before the end of the month "rock-flies" and "snow-spiders" were seen on several occasions. On the last day of the month I noted in my diary that the "snow was settling down rapidly."

During May, 1929, no thermometer readings were taken the first week, though the weather was recorded as "mild." During the middle of the month the thermometer dropped to below zero, the lowest record (-15°) being made on May 25th. During the last five days of the month the weather became milder again, the thermometer standing at from +20° to +30° in the shade. A great deal of snow fell during the month, five- and six-foot drifts forming on the 2nd and the 8th. According to the diary there were only seven calm days during the entire month. For the rest of the time there was a good deal of strong wind, most of it from the northwest. There were three days of east wind, accompanied by cloudy weather.

There is, of course, a good deal of annual variation from year to year during this month. For instance, on May 24, 1928, according to the official diary of the Post "the lakes were thawing." On May 1, 1927 "the first water was noted on the lakes," and so on.

June

The Aivilikmiut call the month of June *Munniliut*, the 'Egg Month.'

June in my opinion is the most interesting month of the year in the North Country. After the wild days of latter May, the sun comes out in earnest; the deepest drifts sink away, as if they were being sucked bodily into the ground. The lakes everywhere thaw rapidly. The tops of the ridges suddenly become bare and the open prairie country emerges from its gray-white blanket. The melting of the snow means that water must collect somewhere in the valleys. Much of it runs into the lakes. Some of it, however, makes its way to the streams, and eventually wanders down to the sea to eat deep channels in the rough salt-water ice, and eventually to form great lakes and pools all along the shore. When the snow really begins to disappear, the birds return on all hands. When the lakes have become open, King Eiders and Old-squaws and noisy loons make their way inland and set up their incessant courtship cries. The world is transformed, within a week or two, from a silent, frigid expanse, to a place of amazing activity and noise. Everywhere the sounds of the mating birds mingle with the cracking of the ice along the shore and on the lakes, the roaring of the swelling streams, and the laughter of the Eskimo children, who are glad to see the winter die. Lemmings come out from their flooded burrows and bask in the sun by the score, their plump little bodies sometimes covering the tops of the stones. By this time the foxes, hares, and weasels are parti-colored, and often they are in oddly poor pelage, as if they had run through a fire. Soon the flowers begin to appear, first a small, purple bloom, which clusters all over the tops of the ridges, then later the white-petalled, pretty *Dryas*, yellow buttercups, and dozens of other kinds. The green grass shoots up; the willow-catkins expand and droop; and the bumblebees and butterflies wander about. So much is going on and so much is to be done that it is difficult to sleep. The sun is in the sky almost all day; even

when it sets, its light is so strong that the world never becomes really dark, though to be sure, this is not the "land of the midnight sun," strictly speaking.

At this time the Eskimos spend much of their time hunting for seals and walrus; and they make expeditions to the islands where birds are nesting, for they are eager to gather the fresh eggs. Though the streams continue to pour their muddy torrents into the sea, and though great chasms are by this time dug through the saline ice in all the coves and inlets, yet the great masses of ice continue to hold together, making it impossible to use the canoes or motor-boats to any extent. However, the natives do not hesitate to drive their dog-teams over the rotting ice, though they sometimes encounter grave difficulties at the mouths of streams. During some of our June expeditions our *komatik* sometimes went through water three or four feet deep. Sometimes the dogs had to swim. It was not pleasant business.

During 1930 the first four days of June were a continuous gale, one of the worst I ever experienced. The direction of the wind changed many times, though it was usually from the east. Snow fell and drifted almost constantly. It was impossible to see more than a few rods from the windows at the Post. We all had the feeling that winter would never pass. The temperature was not low, however, the thermometer standing at from +28° to +36° most of the time during the day. On the 5th, the wind ceased and the sun came out, but there was no thawing of the lakes or bays. On the 7th it was foggy all along the edge of the floe, but the day was fine inland, and much thawing took place, enough to cause many large pools of water to collect along the tops of the ridges among the boulders. On the 8th there was a little rain and two flashes of lightning with some low, distant thunder. On the 14th it rained a little and later snowed, but the snow melted almost as fast as it fell. On this date I noted that the ice of South Bay was covered with from one to five feet of water which gave the whole expanse a beautiful blue color. Within a day or two this surface water drained off leaving the ice much the same in appearance as it had been during the winter. On the 17th, I got soaking wet crossing a turbulent stream, which I thought would not be very deep, but which proved to be terribly swift and treacherous. I had to swim to get out; got all my equipment, including a camera, wet; and nearly lost my shot-gun. On June 20, I wrote in my diary "warmest day of the season: in fact it was almost enervating." I did not see a thermometer on this date. There were some windy, rainy, and foggy days, but the sun shone most of the time and the weather was, for the most part, delightful.

For some reason or other, perhaps because the season was so dry, we had very few mosquitoes during the summer of 1930. Not once during June was I really bothered by the insects. During 1928, however, mosquitoes were noted in the Post diary as "bothersome" on June 26. I think the season must have been rather early that year, for the ice of the cove was "breaking up" on June 9 and "getting rotten" on June 22, while in 1930, the ice of the Bay was in good condition for the most part until the end of the month. Mr. Ford told me that he considered the 1930 season unusually late.

July

The Aivilikmiut have two names for this month: *Kittuailliut* or 'Mosquito Time,' and *Shughuliut*, the "time when the caribou hair is shortest."

July is the summer month. It is at this time that the flowers open everywhere, giving to the ridges and prairies bright colors they have at no other time of the year. Mosquitoes, save during unusual seasons, emerge from the shallow lakes and fly about in untold millions, a scourge to man and beast alike; butterflies twinkle about among the flowering legumes,

dropping to the ground the moment the sun goes under a cloud. By this time much of the noise of courtship among the birds is over. The duties of family life are urgent. Food must be gathered for the clamorous young.

The last of the ice disappears from the lakes under the spell of the July sun; and sooner or later, even the great mass of ice in the wide bays breaks up and drifts out to sea most of it never to return. Snow may fall at any time; but for the most part the weather is genial, and sometimes it is wonderfully pleasant. Rain may fall and fog gather along the shore; but as a rule it is not a month of savage wind.

During 1930, we had a good deal more "gray weather" than usual. For days at a stretch we would sometimes hardly see the sun. On the 5th, mosquitoes were somewhat bothersome, as I crossed some of the sheltered marshes, but it was usually too chilly and cloudy for them to be much abroad. By the 12th the ice of the Bay was so rotten and broken up, that there was an open channel from the Post extending southward to Bear Island. With the breaking up of the ice, the handsome and delicious *Ichalook* or Salmon Trout, made their way into the coves and inlets and the natives began to put out their nets to catch them. On the 13th and 14th it looked very much as if the ice in the Bay were going out for good, but the wind changed and blew it all in again, closing the channel which had opened to Bear Island. On the 15th we wakened to find that every vestige of ice in the whole of South Bay had gone out during the night. When the ice thus leaves, the Eskimos feel that summer has really come.

The latter part of the month was disappointingly cold and cloudy. The last three days were wet and windy, and decidedly unpleasant.

I was interested to find, upon consulting the diaries of the Post, that the ice evidently goes out of South Bay at about the same time every year. In 1925 it went out on July 12; in 1926, on July 11; and in 1927, on July 8. The very day the ice goes out of South Bay, walrus-hunts are organized, and canoes and motor-boats make their way out after seals. If any long trips are to be made, they are begun at about this time. During the summer of 1930, Muckik and his family made their way across the sixty mile stretch of water of Sir Thomas Roe's Welcome to the region of Chesterfield Inlet, to get for his son, Kooshooak, a wife, who had been betrothed before her birth.

August

The Aivilikmiut call August the Month of Young Ducks, *Mittiadliut*. This name describes the season very well, for every lake at this time has its families of loons, gulls, ducks, or geese. Most of the adult birds are undergoing a post-nuptial moult, which renders them relatively inconspicuous. During this month a good deal of migratory movement is to be observed among the shore-birds. Whether these birds are making their way south after their nesting duties are over, or whether they are non-nesting birds which are wandering about, it is not possible at present to say.

The Eskimos during August capture a good many *Kellilughak*, or White Whales, as well as seals and walrus. Their trout-nets, too, are out in the coves and at the mouths of the streams, and they capture a good many fish. Flowers continue to bloom throughout most of the month, and on the warmest days butterflies and other insects of a good many kinds are to be seen until about the 15th.

During August, 1929, the first frosts of the fall season were noted on the morning of the 29th. On this date deep mud along the margins of some of the lakes was so firmly frozen that I could walk on it. During 1929 and 1930, I noted no snow-fall during August, though

Mr. Ford told me that snow might fall at this time, just as it may at any other time of the year. August is likely to be windy and rainy. On August 4, 1925, there was "heavy rain with thunder" according to the Post diary. During 1929 and 1930 I did not keep any careful record of the temperature.

During the latter half of the month signs of fall are to be noted everywhere. The leaves of the tiny shrubs turn yellow or scarlet, giving a brilliant sparkle to the otherwise sombre tundra. Mushrooms are to be seen everywhere, instead of flowers. Birds have given up their singing for the most part, and many of them are banding together for migration, or passing through the latter stages of their late summer moult. Since the days are only rarely fine, the sky is usually gray and the lakes and sea of a monotonous shade of gray or gray-green, inhospitable, and unfriendly in character. The wind and rain are chilly and unpleasant.

September

The Aivilikmiut have two words for the month of September: *Akudligut*, the "time when the caribou hair is half-grown"; and *Miyuakvik*, the "time when the fish go up the brooks."

September is usually an unpleasant month. The days are more than likely to be wet and chilly. There is much fog and rain. Snow usually falls several times during the course of the month, though it rarely becomes very deep.

During 1929, we had our first snow of the fall on September 11. The snow was not deep and it melted quickly, but it snowed quite hard for three hours. On September 18, we had several wild flurries, but the snow did not remain on the ground very long.

The first heavy snows of the fall usually come in September. In 1924 the first such snowfall came on the 15th; in 1925 on the 9th; and in 1926 on the 14th; though during 1927 no heavy snow-fall occurred prior to the first of October. Heavy frost nearly always comes in this month, so that by the first of October most of the lakes are usually frozen over, though the bays and inlets are usually still open. During 1926 the "lakes were all frozen" by September 28; during 1925 there was "ice on the lakes" on September 20. Frequently, however, the freezing over of the inland bodies of water does not take place until some time late in October.

October

Among the Aivilikmiut October is known as *Nooliakvik*, the time when the caribou mate.

October is a wintry month at Southampton. By the end of September nearly all the small birds have left and the bright colors of the fall season have faded. Snow falls frequently, so that by the 15th the country has taken on a white and wintry appearance. The largest of the lakes are all frozen by the middle of October, and the bays and inlets themselves usually have a firm coating of ice, though the Eskimos do not usually trust themselves to journey across the salt-water ice until it is quite firm. Though it gradually gets colder as winter approaches, many of the October days are fine and bright so long as the sun is out. Wind is usually from the north and northwest.

During October, 1929, I did not record a single temperature above freezing. The coldest day of the month was the 26th (temperature +2°); the warmest days were during the first two weeks when +28°, +30°, and +31° were recorded upon several occasions. Toward the end of the month there was a good deal of variation in the temperature. The average temperature for sixteen days was +20°.

The waters of South Bay always freeze shut sometime during October. During 1925

the cove near the Post was said to be "full of ice-slob" on October 14, and it was solid two days later. On October 8, 1925, South Bay was "frozen solid." On October 28, 1926, there was a "thin sheet of ice across the harbor." On October 13, 1927, the Bay was frozen shut. During 1929, the season was apparently later than usual, for the waters of the cove and Bay did not start to freeze until October 27. Occasionally there are mild spells in October, as in 1924, when they had a week of "melting" weather from October 12 onward.

Though considerable snow falls during October, the natives do not usually undertake their long *komatik* trips until later in the season.

During 1846, the highest temperature recorded at Repulse Bay by Dr. John Rae was +38°, the lowest +15°. On the whole this was not very cold weather.

November

The Aivilikmiut call the month of November *Khianguliut*, the time when ice forms all round the shore.

Most of the bays and inlets freeze solid during the month of October. In November, however, the sheet of ice spreads out considerably, usually forming a more or less unbroken band all about the shore, sometimes for a distance of eight, ten, or twelve miles out, depending on the stillness of the weather and of course on the lowness of the temperature. Ice rarely forms for any distance eastward along the shore of Fox Channel. There is not usually a great deal of snow during this month, but there is much wind, so that drifts are formed everywhere in the rougher country, drifts where the Polar Bears may find a snug retreat, in which to hibernate during the coldest part of the season. By this time the foxes, weasels, hares, and ptarmigan are again in their white, winter-coats, and the caribou are much whiter than they were in the summer. Practically all the migrant birds have passed to the southward before the first of November, though an occasional redpoll, Snow Bunting, or White Gyrfalcon may linger until later in the season.

During 1930 the month of November opened with rather mild weather, the first three days having a temperature of +10°, +9°, and +10°. There was then a sudden drop to −20°, and the thermometer did not rise above zero again throughout the month. The average daily temperature for the month was −20°. The warmness of the first three days of the month raised this average considerably, and without these three days the average would have been −24°.

On November 5, 1925, there was such a strong southwest wind that the ice of South Bay, which had formed rather solidly some time before, was considerably broken up. As during other portions of the winter, there are occasional mild spells during this month, but such spells are not usually of very long duration.

During November, 1846, Rae recorded the following temperatures in the region of Repulse Bay: highest for the month, +28°; lowest for the month −25°; and the mean temperature "+0.68."

December

The Aivilikmiut call the month of December *Akjuk*. This is the name of one of two stars, which are to be seen clearly at this time of the year just before dawn. The Eskimos say that, when these two stars are seen together just before dawn, the days will soon begin to lengthen again.

December is a cold month. The days gradually become shorter and shorter, until on the 21st the sun rises at about 10 o'clock in the morning and sets at about 1 o'clock in the after-

noon, passing in the meantime through a short arc but a little distance from the horizon. This is the winter season, *Ookiuk*, when there is much frost every day, and when the world is very cold. The *Eeveetaghuk*, or land-locked Salmon Trout are in the bottom of the deepest lakes swimming slowly about under the ice. There are few birds anywhere, only Rock and Willow Ptarmigan, Snowy Owls, and inland an occasional raven. Along the distant edge of the floe there may be many Mandt's Guillemots and some Brünnich's Murres, but such water-birds are to be seen only by hunters, who go out after seals and walruses.

During December, 1929, I took temperature records on only twenty-three of the thirty-one days. The average temperature for these days was −29°. The thermometer never rose above zero during the entire month, though it did not fall below −40°. On the 13th, 14th, and 15th, it rose as high as −6° and −8°. These high temperatures raised the average of the month considerably. There was a good deal of wind from the north and northwest, so much in fact, that Mr. Ford was wont to refer to Southampton as the "home of the winds." Not a great deal of snow fell, but snow was in the air much of the time, because it was so constantly being drifted by the winds. We had no foggy days during the month.

During 1928 the month of December was warmer on the whole than in 1929. The thermometer stood below zero most of the time, though temperatures around +10° were recorded on the 11th, 17th, 18th, 19th, 27th, and 28th. On the 7th and 23rd the coldest temperatures were recorded, −30°. During December, 1924, there was a mild spell (actual temperatures not recorded) during the second week. In the Post diary the weather was recorded as "mild, with wet drifting."

ETHNOGRAPHICAL

THE ESKIMOS OF SOUTHAMPTON ISLAND

The Extinct Saglernmiut

The Eskimos who formerly inhabited Southampton, according to those who have studied their culture, were a specialized, rather unique tribe. They were known as the Saglernmiut or Sadlermiut (Comer, 1910, p. 87), Sadlermio (Mathiassen, 1927 c, p. 222), or Sead-ler-mee-oo (Munn, 1919, p. 54). Other spellings of the word have doubtless appeared. Following the pronunciation of the Aivilik Eskimos themselves I should write it *Shuglukmiut*. The suffix *miut* means 'people' or 'tribe.' The first part of the word, according to Mr. Ford, is a widely used native name for the Island, meaning, perhaps, 'a flat place' or 'a flat island.' As to the etymology of the word I have found no comment in the literature at hand.

The Saglernmiut were apparently never very numerous. We have no record establishing their rate of increase or decrease in former years, but it is easy to believe that even some time prior to the coming of the scourge which exterminated them, they were little more than holding their own. They died out in 1902, as a result of some infectious disease, against which they had built up no racial resistance. It is thought by some that a few individuals of the tribe still live, but I do not know that this belief can be proved; and, even if such individuals do live, they have long since been assimilated into some other tribe. The last stronghold of the Saglernmiut was at Native Point or Tunirmiut (see Mathiassen's map, 1927c, p. 328), a peninsula or point about thirty-five miles southwest of the head of South Bay.

The Saglernmiut evidently inhabited Southampton for a long time. According to

Mathiassen (1927c, p. 222) the first explorer to come in contact with them was Captain G. F. Lyon, who wrote in the record of his voyage a very interesting account (1825, pp. 56-64) which is illustrated with a most attractive drawing, which Lyon himself made, of "A Native of Southampton Island" sitting on a sort of raft of inflated sealskins.[7]

There is scarcely room here for any detailed discussion of Captain Lyon's comments upon this now extinct people. It is extremely interesting, however, that he noted hearing the word "Kooyenna (thank you)" in August, 1824 (1825, p. 57), in view of the fact that a word which is very nearly identical, is widely used among the distinctly different tribes, which today inhabit the Island. I refer to the word *Kooyanna* or *Kooyannamik*, which now is constantly used as an expression of gratitude.

In 1865, according to Boas (1888, p. 451), "an American whaler" again encountered the Saglernmiut at Manico Point. But our chief source of information concerning these interesting people is Captain George Comer, who was associated with them from 1896 to the very year they disappeared, who became well acquainted with their way of living, and who excavated at points where they had lived, bringing to light much interesting and valuable ethnological material. Captain Comer has most generously sent me his personal note-books, wherein appear such interesting accounts of the Saglernmiut that I desire to quote from them here, rather than from any of the more elaborate treatises, which have been published, and which, though perhaps more finished in detail, are certain not to possess the fresh authenticity of notes of this sort. The account, in part, reads as follows:

"I first landed on the Island in 1896 (July 14) at Cape Kendall, a little to the East on [the] south shore [of the Bay of God's Mercy] where we found the remains of old stone igloos.[8] The stones, being large and flat made it easy to build very good foundations and . . . the roof had been formed by placing whale ribs with turf [on them]. . . By lifting up [a] stone in the floor [a] quite large, box-like place was seen which was probably used for meat and clothing. Also there were lockers[9] at the side. Nearby were graves. One foundation had an entrance built of large flat stones . . . about 15 feet long. There were also, nearby, large caches about six feet high.

"We landed next day at the Bay of God's Mercy where we saw some whale bones standing up at a cache.

"On opening the cache we found a number of small birds were stuck on sticks, skinned. Also other meat.

"We took the whalebone, about 50 lbs., left a knife and needles [in exchange] but could find no natives. The next day we landed on the south side of the Bay on Manico Point. Here we found the land much higher, and little or no vegetation, but signs where the natives had camped with skin tents. . . Along this shore to the southward are many snow-banks which are protected from the sun. In travelling over the ground I could see places where the natives had put up a ridge of stone and . . . waited for the Deer [Caribou] to approach near enough to be shot.

"Two days later we met the natives about ten miles below here.

[7]To one, who is acquainted with Southampton Island and with Eskimo life in general, this drawing will seem little short of ridiculous, though it is indeed nicely executed. The serene facial expression of the Eskimo man (or woman) who sits on the sealskin raft, legs dangling in the water, hands daintily clasping both a paddle handle and an arrow, suggests that of a vacationist at some tranquil summer resort out for mild exercise or a bit of tanning in the sun.

[8]The word *igloo*, precisely speaking, is the snow-house of the Eskimo. Captain Comer has used the word in a broad sense.

[9]These were hardly *lockers*. Here too the word is used in a broad sense.

"The men wore their hair done up in a top-knot.[10] The houses were partly built of stone and earth, covered with skin (seal).

"We got some more whale-bone of them; also one sled made of whale-bone.[11] They also use another [kind of] sled [which is] made by using two walrus tusks for runners. . . It would look as if it could be used only by one person.

"The whale-bone we got from them was taken from a whale they had caught in 1893. The whale must have been a very good sized one as the bone was 9 feet 2 inches. I speak of this to show what they can do with the gear they make. We gave them a harpoon and a lance, also each man a knife and the women needles. We had a number of Iwilic[12] natives with us. They could talk together quite readily.

"These natives were much pleased to see us. When I first went to see them our natives would not go without their rifles; while they were gone to get them I went on alone. They [the Saglernmiut] came up in force—men, women, and children, shouting 'whar, whee, whar, whee,' and showed their good will by a series of short jumps. They gathered round me, felt of my clothes, and talked like so many monkeys. Soon our people came up and then more talk. Then we went up to the houses, our natives keeping their rifles with them, two men, one on each side of me holding a hand, and the others paired off, and away we walked. We stayed and traded with them for the [whale-] bone and tried to find out about the whales. . . They would not eat the bread we offered them or the coffee. . . Our natives stood watch all night for fear they might return and attack us. I have no doubt but that the Southampton natives kept watch for fear we might destroy them.

"There was only one man who might be called old, though he might not have been over fifty years of age. To him they gave what we gave them; then he gave it back to them. . .

"We left them next day and our natives were glad to get away from them.

"In the summer of 1898 we went to Southampton . . . and landed about 25 miles below Manico Point, where we found another party of natives. . .

"We had for our object in landing to enquire of them about whales . . . and also to give them some hickory bows and arrows, knives, needles, and saws. They seemed anxious to give us what they could. . . We had an Iwilic native and his squaw with us. As we had gone to the tents the woman had walked behind and was not seen at first, but when one of the older women did see her she stepped to her quickly and though what she said could not be understood she certainly acted very womanly and seemed to try to make her call pleasant.

"Whatever we gave them they would all give a 'whar whee.' When the bows were bent to show them what these would stand without breaking—that to them was wonderful. Files, of course, they did not know, but when shown the use of them there was more *whar-whee*-ing."

There follows an account of the killing of three whales, two of which drifted ashore after the baleen had been removed. The narrative continues:

"Two of the carcasses drifted ashore and made a great feast for them, besides laying up a large amount for future use.

[10]The Eskimo men of the Island today usually wear their hair short.

[11]The sled was probably fashioned of the ribs of whales, rather than of the baleen or *whale-bone*. Captain Comer probably here, means, 'whale bones' rather than 'whale-bone.'

[12]Throughout Captain Comer's paper this word is spelled *Iwlic*. Personly I prefer Aivilik. The word comes from the Eskimo for walrus, *Aiviuk*. The Aiviliks or Aivilikmiut, are the people 'who hunt walrus.' Since the Eskimos have not evolved any alphabet, so far as I know, the correct spelling of their words is almost purely a matter of conjecture.

"It is a custom with the Iwilics, and I think it must be with the Southampton natives [also], that when they get a whale it is looked upon as a great gift . . . and to show their appreciation of the gift they must not be afraid of soiling their clothes but rather see how much grease and filth they can cover themselves with. . .

"The land down this way was lower than at Manico Point but rose inland, apparently. [The surface of the ground was] nothing but broken stone, but perhaps [it was] a little improvement to the land around Manico Point.

"Only one of the natives had two wives. There were only five or six men.

"I think [there were] only 14 natives in all, from what we could understand. . . The party to the north had moved to the east shore. Our natives could talk with them quite well; the women understood quicker than the men.

"During July, 1899, while [we were] on Southampton Island, [we saw] but one *tupek* or family[13] where we were, at Lat. 63° 10′ [along the] west shore. [We] were there three weeks and got a little acquainted with the man and got him to tell us how many there were on the Island by laying down as many stones as there were natives—18 men, 20 women, 8 boys, and 11 girls."

In a later section of Captain Comer's diary is a further discussion of the Saglernmiut as he found them in 1899:

"Along the shores[14] are many stone cairns for storing meat and blubber . . . and here the natives have their houses. They are built round and those we went into had a large center stone raised about two feet from the floor. This stone was 6 or 7 feet across and acted as a shelf and table. Sometimes on the center of this were placed whale jaws and crown bones, then the whole covered with earth, a place being left for a window on the entrance way which was also made of stone and covered with earth. This window-hole [was] used to pass things in and out. . . The houses were abandoned in summer . . . being quite wet. From the center stone in back were raised platforms for the beds, and around and even under them were caches for stowing away meat and clothing.

"Much old blubber lay around as though they had had plenty to eat. Farther down the coast (Lat. 63° 10′) we came to a tent with one family . . . consisting of the man, his two wives, two children, and two boys [who were] living with him. . .

"His tent was made of seal skin. [It was] pointed at the top, which left quite a hole over which was spread some lean meat to keep out the wind, and, I thought, to dry and smoke the meat at the same time for future use. Many pieces of meat he placed on stones which had been built up to contain meat.

"We stayed here a couple of weeks and caught a number of whales, and this gave [the family] a chance to lay up a large supply of blubber for winter use.

"Wherever we landed . . . we were sure to find the bones of whales, and not far from where we found the natives I counted forty scalp bones within a small space. They certainly [must] have been great whalemen.

"This family's clothing, both men and women, consisted mostly of bearskin patched with buckskin. . . One of the wives was quite an antikook[15] and she seemed to surprise our natives by her powers, telling them things they had done.

"One morning before starting off I cut some deer meat up with a hatchet and gave each

[13]The word *tupek* means 'skin-tent'; as here used it appears to be synonomous with the English word *family*.

[14]They were now along the shores of the Bay of God's Mercy, not far from Cape Kendall.

[15]The usual spelling accorded this word is, I believe, *angekok*. The word means *soothsayer, wizard* perhaps, or *prophet*.

boat enough for the day. We got fast to a whale, and had about killed it when we lost it by taking two boats' lines under the ice. That night when we returned . . . the antikook . . . said the whale did not like it because I had broken the deer's bones and for that reason had pulled with all its strength to get away. But her Tornwark (good spirit)[16] would hold the whale for us. Two days later we found the whale . . . not far from where we had killed it, the line being fast around a stone on the bottom. . .

". . . the other natives were off salmoning. [One of the natives sang a song] and it was certainly more musical than any I have heard among these natives."

The above quotations from Captain Comer's diary give us an excellent picture of some phases of the lives of the Saglernmiut just four years before they became extinct.

The life of the Saglernmiut, their implements for hunting, their houses, and their culture have been thoroughly discussed by Therkel Mathiassen (1927c, pp. 268-287). This account is well worth careful study, but I cannot quote at length here. Authorities agree that the Saglernmiut were an ocean-hunting people. They lived upon seals, walrus, and fish, and did not hesitate to capture the largest whales, the blubber and meat of which they used for food, and the bones were used in the construction of their permanent houses. In these winter houses "two to four families lived together as a rule." Igloos were built, according to Aivilikmiut men who were acquainted with their customs, but these were built only on journeys. Their clothing was much like that of the Polar Eskimos. Their *kayak*[17] was like the sea *kayak* of the Aivilikmiut. They had no woman's boat.[18] As heretofore noted, these people died out as a result of an infectious disease, not of starvation. I, myself, as noted elsewhere in the present paper, have seen the ruins of their houses at Native Point, have found their skulls and bones lying about on the moss, and have peered into the stone graves at the remains of these unfortunate people.

Because in the present volume we largely deal with the bird-life of Southampton, Mathiassen's comments upon the use of birds by the Saglernmiut are worthy of quotation in their entirety (1927c, p. 278-279):

"*Birds* were of much greater value to the Saglernmiut than to the Igloolik Eskimos. The island is fairly well stocked with birds. For large nesting birds like the swan they used bird harpoons, $1\frac{1}{4}$ in. long arrows with two feathers and loose heads, tied to the shaft by a cord; the movement of the bird broke off the head and the shaft hampered its flight. Bolas were especially used against flocks of eider ducks, mostly three or four bone balls connected by cords $1\frac{1}{2}$ meters long. Bird darts were also used, with one point and three side prongs of equal height; throwing boards were used with these, with a handle and a hole in the fore-end for the peg of the dart. Geese were driven into round fenced enclosures,[19] 2 meters high, 4 meters in diameter; diverging rows of stones led from the doorway; a flock of geese was driven into this . . . the door was closed, and every time a goose puts its head out through the stones its neck was twisted. The usual hooks were used for catching gulls, the hooks being of wood with a barb, and the whole buried in a piece of blubber and thrown out on the beach, whilst the cord was made fast to the ground, sometimes with a stick of wood or bone without a barb. Baleen snares were largely used for trapping birds; some of these were long cords with a number of running nooses, which were stretched about the breeding places or sunk in the water for diving birds, whilst others were single snares which were set over the

[16]Sometimes spelled *tornyak* or *torngak*. From what I have heard of the word, it means *evil spirit* quite as often as it does *good spirit*.

[17]Boat-canoe.

[18]*Oomiak*, so called.

[19]To my great surprise I did not find the Aivilikmiut or Okomiut capturing flightless geese in any such way.

nests, the latter especially for eider ducks. A little blubber was often fastened to the nooses of the under-water snares. In spring they sometimes built a low, thin-roofed snow house, just large enough to permit a man to crawl inside, close the door and sit upright; a bait was laid on top of the house, and, when a bird came to take it, the man inside could see it through the thin roof and quickly pushed his hand through and seized it by the legs."

According to Captain Comer the Saglernmiut had comparatively little to do with birds, though to be sure they did kill and eat them, and they sometimes gathered eggs. But their principal interest was in the great marine animals; chiefly the walrus and the whale. Their presence probably did not in any measurable degree affect the abundance of Southampton's bird population.

Mathiassen mentions, in addition to the Saglernmiut, another tribe, which is said to have inhabited Bell Peninsula, the southeastern part of Southampton Island. These people he calls the Sikosuilarmiut (1927c, p. 287) but he tells us very little about them.

Present Day Eskimos

The original inhabitants of Southampton, the Saglernmiut, are gone. Today two tribes inhabit the Island. According to Mr. Ford's careful census, made in July, 1930, there were at that time, 138 Eskimos, men, women, and children counted, on the Island. The two tribes are known as the Aivilikmiut (Aivilik people, or Walrus Hunting People), and the Okomiut (perhaps People from a Warm Place, *oko* sometimes, at least, meaning *warm*).

The Aivilikmiut

The Aivilikmiut, Aivilingmiut (Mathiassen, 1928, p. 15, etc.), or Iwilic (Comer, 1910, p. 90) are, according to Mathiassen, one of the tribes of the Iglulik (or *Igloolik*) branch of the Central Eskimos.

Probably about half of the Eskimos who live upon Southampton today, belong to the Aivilikmiut. Their ancestral home is to the north and west of the Island, principally in the Repulse Bay country. They came in contact with the Saglernmiut in former years and have for a long time known of Southampton, but their continuous occupation of the Island dates back to about the time of the extermination of the Saglernmiut. The Aivilikmiut came into contact with the early whalers. They accompanied Captain Comer, Captain Munn, and Therkel Mathiassen, when these men worked about Southampton. They have come to know the program of the Hudson's Bay Company and now spend much of their time in taking fur, with which they trade at the Post.

While the Aivilikmiut are in many ways quite dissimilar to the other tribe at present inhabiting Southampton, they are not particularly different, in so far as they influence and are influenced by the bird-life of the Island. They are a pleasant, comparatively cleanly people, who now live in skin or canvas *tupeks* (tents) in summer, and in *igloos*, when hunting during the winter. The customs of the people will be discussed briefly in connection with those of the other tribe.

The Okomiut

The Okomiut, or Oqomiut (Mathiassen, 1927c, p. 287) are not one of the tribes of the Iglulik Eskimo group. They live in Baffin Island to the east of Southampton. The individuals of the race now present on the Island came originally from the vicinity of Lake Harbor and Cape Dorset, I have heard. They were transported from Baffin Island to

Coats Island, where they lived during Mr. Ford's residence there. They seemed to me a good deal like the Aivilikmiut in general appearance; though they were less cleanly, were more shiftless and irresponsible, and perhaps, less intelligent. The general customs of the two tribes and their racial problems appeared to me to be about the same. Their language was different, however, so much so that at times the two tribes could scarcely understand each other. Their names for the birds, for instance, were often superficially or basically different, so that it was not easy to tell the natives what birds I wanted without knowing both tribal names for the species.

As a rule I seemed instinctively to like the Aivilik people somewhat more than I did the "Baffinlanders." But this liking may have been traceable to my own prejudices or merely to the more attractive external appearance and joviality of the Aiviliks. The two tribes, in so far as their *food* problems were concerned, were so similar that it is easy to discuss them together.

The Eskimo's principal problem is food. He must secure food for himself and his dogs, or he perishes. Southampton's Eskimos of today hunt the caribou, though this fine mammal is comparatively rare, the walrus, several species of seal, the White Whale (*Kellilughak*), and the Polar Bear for food for themselves and the dogs, and for skins, which are used in the making of their clothing. They do not hunt the large whales as extensively as did the Saglernmiut. Today they do not need the great ribs for roofing their houses, and they are content with walrus-blubber for winter use. They do, nevertheless, pursue the whale, because of the trade value of the baleen, and they may use the huge carcasses for dog-food.

They live in tents in summer and sometimes in winter. While hunting or travelling they make *igloos*, but these are never used as permanent winter-homes. They have been in contact with civilization so long that nearly all the men have good rifles, and they use sewing machines, binoculars, granite-ware cooking utensils, Coleman Gasoline and Primus Kerosene stoves, imported snow-knives, steel-traps of course, grammaphones, accordions, mouth-organs, knitted sweaters, woolen underwear, lumber shirts, shell-rimmed snow-glasses, cameras, and all sorts of civilized foods. Their appearance, especially in summer, has changed amazingly as a result of this contact with the White Man's civilization. The men who are better-off may even own motor-boats. Their *kayaks* or *oomiaks* are imported canoes; their *komatiks*, or dog-sledges, are made of wood, heavy planks from the South, not of driftwood. Upon the whole they are in many ways a comparatively civilized people, and their vocabulary is likely to include such words as "Motah Khah" (motor car), "Ayoplen" (airplane), and so on!

The introduction of modern firearms has led, I fear, to the useless destruction of some forms of wild-life. Many seals and probably walrus are killed, which can never be retrieved, since the carcasses sink so rapidly. Feeling the need of excitement, the Eskimo will shoot at, and kill, if possible, nearly any sort of living thing, rather than return from a hunt with nothing at all.

The Eskimo, however, is scarcely to be blamed for anything he does. His winter is so bitterly cold, his sources of amusement sometimes so very few, that it is not to be wondered at that he occasionally shoots an animal or bird for excitement. Furthermore he desires to keep his technique good.

All in all the Eskimos are a happy, likeable people. They take a child-like delight in playing games and in telling stories. The summer, when food is abundant, is a riotous time for egg-hunting, fishing, and playing. The ancient custom of killing daughters, when there are too many children, has disappeared. Monogamy is the rule. The influence of mis-

sionaries has, perhaps, had much to do with the refinement of certain phases of Eskimo life; but most certainly the Hudson's Bay Company, in providing a source of supplies for trade, has also helped to solve the Eskimo's racial problems, so that the Southampton Islanders of today are in no actual danger of starvation, so long as the storehouse at the Post does not burn, and Mr. Ford and the good missionaries are ready to help any or all of them at any time with ammunition, food, medicine, or clothing, as they need it.

The natives in return bring in a good annual catch of fox-skins to the Post, and attend the services at the Mission in a somewhat sporadic manner, as opportunity offers. They are friendly, though I have sometimes felt that their friendliness was not without ulterior motives. Their principal problem, as I see it, is that of dog-food for winter. The Post can supply them with flour, tea, and so on, when they catch foxes, or even with credit, when they do not. But the Post *cannot* furnish them with walrus and seals, which the dogs must have in winter. And the procuring of these marine animals is sometimes exceedingly difficult in certain seasons.

The Arctic world contains comparatively so few objects, and the Eskimo has so much spare time, when shut-in during the winter, which he may devote to conversation or contemplation, that he has developed a considerable vocabulary, and often with surprising intimacy knows the life-history of the birds and mammals, with which he is acquainted, and is upon the whole rather a good naturalist. Nearly all the Eskimos, with whom I came into contact, knew the names of birds and their distinguishing characters very well. Santiana, a fourteen-year old boy, knew the differences, for instance, between the Red-backed Sandpiper and the Semipalmated Sandpiper, and instantly gave me the correct native name for the two species without hesitation. In their discussions of certain birds, fancy was often generously mingled with fact; but the Eskimos usually knew the facts. They are keen observers, for they *have to be*. Often their lives depend upon a definite knowledge of the ways of the animals upon which they prey.

The Eskimo as an enemy of bird-life will be discussed in a later part of this volume. For the present I wish to make it clear that the natives are sufficiently interested in the birds to have given to virtually all of them well defined names. They do not always distinguish the different species of redpolls, to be sure, nor have they actually noted some of the species which I collected, which are rare (such as Baird's Sandpiper); but they are quick to notice differences in such species from those with which they are familiar. They are not, however, always acquainted with the nest and eggs of well known birds; Amaulik Audlanat surprised me, for instance, by confessing that he had never seen the eggs of the Black-bellied Plover (*Torgaiuk*) and he was amazed when I showed him how large these eggs were in comparison with the size of the body of the female.

In the List of Species, Part II, Section 2, of this work, I have attempted, wherever possible, to give and to explain the Aivilikmiut names for the birds of Southampton.

Since birds are so prominent an element in the world in which the Eskimo moves, it is not surprising that his stories and legends include many references to *Kopernoak*, the Snow Bunting; *Ookpikjuak*, the Snowy Owl; *Tooloogak*, the Northern Raven; and so on. The Eskimos all know that their familiar summer birds go south in winter, though it is questionable that they ever gain a proper conception of the trees, great rivers, and so on, of the more southerly latitudes, in which these birds may live while they are not in the Arctic.

The names, which the Aivilikmiut have given the birds, are in most cases onomatopoetic, some of them very cleverly so; others suggest the kind of locality in which the species is to be found, others mannerisms, color, and so forth. In the ornithological section, wherever

I have written down an Aivilikmiut word, I have intentionally not followed the spelling of any author, not even Peck himself, for to my way of thinking, it is impossible for us to *know* how these words are to be spelled, and the best we can do is to spell them with our own letters in such a manner as to give the best possible representation of the sound of the word.[20]

THE CONCEPTION OF SOUTHAMPTON ISLAND HELD BY THE ESKIMOS

When I showed a map of Southampton to the Eskimos they hastened to explain to me that my map was misleading in many ways. They agreed that the general shape was about right, but that the "Bell Peninsula," Seahorse Point, and the East Bay regions were badly in need of revision.

Mr. Ford and I finally consulted with the men as to a means of getting a good drawing of the Island's coast-line as it should be. It was finally decided that Tommy Bruce[21] should

Fig. 1. First sketch of outline of Southampton Island drawn in pencil by Tommy Bruce, an Aivilik Eskimo.

make the map, since he had travelled widely and was known to be clever with the pencil. Amaulik Audlanat, who is the only man, so far as I know, actually to have entirely circumnavigated the Island, worked with Tommy; and the combined efforts of these two men

[20]For example, the Eskimos refer to a certain place not far southwest of the Post as *Munnimunnek*, with both "*u*"s short. Etymologically this word is said to mean *Moss-Moss*, and should according to Peck, be written *Mannek-Mannek*. What, I ask, is the point in spelling such a word in a manner in which it is not pronounced, or in assuming that our letter *a* be pronounced in Eskimo as a short "*u*"?

[21]Through an unfortunate lapse, the native name of this fine Eskimo was not recorded in my diary. Even among the natives he was usually called *Tommy Luce* or *Tommy Bluce*, or *Tommy Lewis*. (Plate II, fig. 2)

resulted in the outline chart which is reproduced here.[22] Tommy first drew a rather small sketch, which, when examined and commented upon by all, was considered inadequate. [Fig. 1]. The second draft [Fig. 2] represents about one full day's labor.

Certain digressions from modern charts are at once apparent in these sketch-maps, though the general shape is the same. The size of the sheet of paper, upon which Tommy Bruce worked, may have affected the shape of his drawing to some extent, since he probably felt an instinctive desire to fill to the best of his ability the allotted space without waste. All in all, the most striking deviation from Comer's map (1910, p. 85) is the general treatment of the region of Bell Peninsula. Here the whole geography is so changed that one can scarcely recognize Seahorse Point; East Bay seems rather to be two equi-sized bodies of water; and there is a bay north of Seahorse, which seems to be quite without its counterpart.

Since the region of South Bay has been well charted (as shown in Comer's and other charts), and since Tommy Bruce's delineation of this section does not by any means agree

Fig. 2. Second sketch of Southampton Island drawn by Tommy Bruce, some localities designated by the author.

[22]Mathiassen (1931, p. 11) also gives us an Eskimo's drawing of Southampton. The man who made this map Mathiassen calls *Autdlanâq*. There is a strong chance that this very Autdlanâq is the Amaulik Audlanat of the present paper, as noted elsewhere. He is shown on Pl. II, figs. 2 and 4.

with facts as we know them, we have every reason for suspecting that his treatment of Bell Peninsula may be wrong in some particulars; that the size of certain bays and islands may be exaggerated according to recollections the natives cherish of experiences on these bays and islands; and that the general bearings of the coast-lines may be wrong in view of the scarcity of compasses among the Eskimo hunters. Nevertheless, and in spite of all possible errors, these maps are worthy of study. The detail of the islands at Seahorse Point is surprisingly good, as I can state from personal observation. The general trend of the coast-line from Native Point to Seahorse seems to me actually much more accurate than in any chart I have seen, and the placing of Leyson Point much more in accordance with facts as we found them, than is indicated, for instance, in Comer's map.

Tommy Bruce's map even suggests that there may be a good deal of misunderstanding as to the actual position of Seahorse Point. Since he shows on his map a considerable body of land to the north, the easternmost extremity of which is far eastward of his own Seahorse Point, it occurs to me that the Eskimos may for years have entertained an absolutely incorrect idea as to the location of Seahorse, and that Tommy Bruce's Seahorse may actually be Leyson Point, the point discovered and named by Lyon in 1824.

I had no means of orienting myself accurately, when I stood on the island marked as Seahorse Point on Tommy Bruce's map. I thought I was at Seahorse because the natives told me so. The discussions of Leyson Point in the literature I have consulted do not mention any islands in the adjoining waters. A further careful study may, however, disclose many misconceptions concerning this entire region. Since I could not make any authentic surveys myself, all I can offer is my own field-map of what I thought to be Seahorse Point, but which may possibly be Leyson Point, at the same time expressing the hope that more careful geographical study may be made, which will clear up the whole matter for all time.

My principal reason for believing that the region we visited was actually Seahorse is that the islands shown on Baffin's map of 1615 seem so adequately to represent those we saw; furthermore, we must account for Captain George Back's James Alexander Gordon Bay, which was named in 1836, but which seems not to be indicated on any of the modern charts at hand.

Tommy Bruce's figure of Tooktootok Island is hardly adequate. He shows the island as too large and too far from the shore. He has shown in East Bay an island, which personally I did not observe. His rendition of Gore Point, however, is good; and his general treatment of the shore-line from Cape Low to the head of South Bay is not far from correct.

It must be remembered that some of the Eskimos are familiar with published maps of their home land; and in their sketches they probably to some extent follow their recollections of published maps. In the present case, I saw to it that Tommy Bruce was not permitted to copy his drawing from anything. We then compared his drawing with a published map and certain modifications were thought desirable.

While I realize that there are many errors in Tommy's drawing of Bell Peninsula, I am convinced that a survey of this region will result in a chart amazingly different from that to which we are now used, but which I unfortunately feel obliged to follow in presenting my own map of the Island.

EXPLANATION OF MAP

(PLATE I)

The map of Southampton here reproduced purposely follows Mathiassen's (1931, inserted) because my own geographical work was not extensive or accurate enough to warrant

making any radical changes. Mathiassen's map incorporates many modifications upon Comer's well-known chart (1910, p. 85), which have been suggested by Comer himself (1913, p. 517), by Munn (1919, p. 53), and others. I am convinced that some further, and radical changes will have to be made in a proper delineation of East Bay, of Seahorse Point, and in recognition of Back's "Gordon Bay."

Place-names First Given in the Present Map

Most of the following rivers, islands, and so forth are, so far as I know, first given definite names in the present chart. Some of these names have been in use among the Eskimos for years. Others have been used by Mr. Ford and his son, ever since they have lived on the Island. A few I have ventured to suggest myself. It seems to me that, wherever possible, native names or their English equivalents, should be used; and this general rule has been followed by me. The following list is chronological in that it gives the place-names in the order of my personal visit to, or exploration of, the localities in question.

Prairie Point: This place is called *Qidtluaq* on Mathiassen's map. Throughout the present paper the region is referred to as *Prairie Point* in recognition of its flat, prairie-like character.

Ranger River, or *Kashigiaksoak:* A medium-sized stream, which empties into Fisher Strait not far east of Cape Low. It drains a considerable area, for, after passing through a rather large shallow lake, into the upper end of which several smaller streams empty, it issues as a single river, which runs eastward for a way, then abruptly turns south. The river is named for the Ranger Seals, which are found in abundance at its mouth. The stream is indicated in Mathiassen's chart as a dotted line.

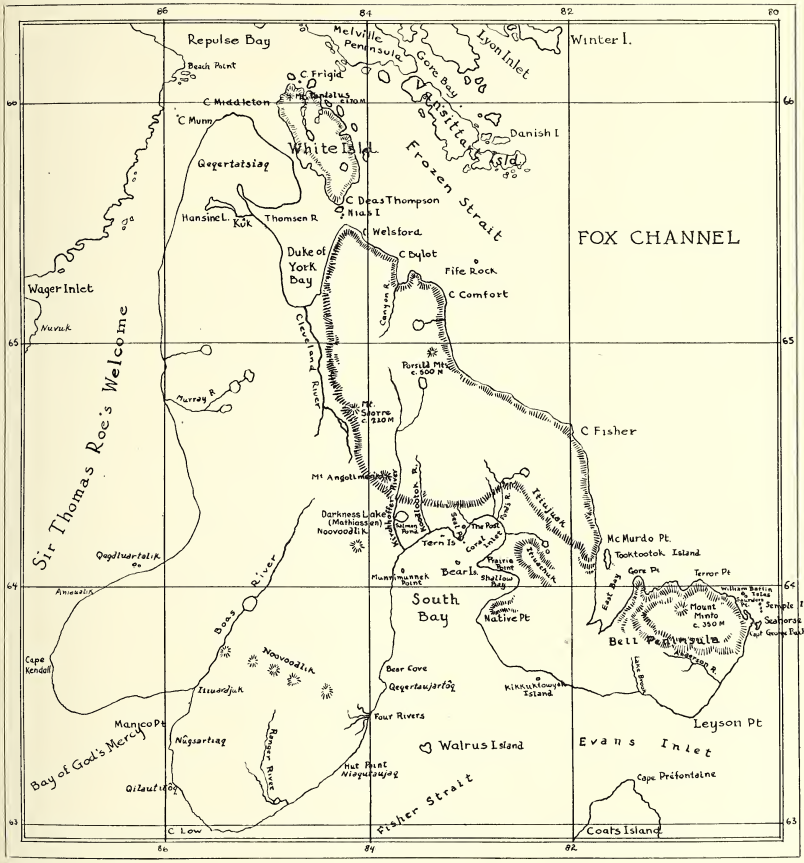
Kikkuktowyak Island: A small, flat island, not far off shore, southeastward of Native Point. Here walruses were seen in considerable numbers. The island is not shown in Mathiassen's map.

Lake Brook: A small stream west of Leyson Point, which I called Lake Brook in my own field-notes, but which Mr. Ford called Mosquito Brook after the innumerable inhabitants of the place.

Anderson River: A fair-sized stream, which I have indicated as about midway between Leyson Point and Seahorse, which Mr. Ford called Whale River because whales had been seen and killed in the ocean nearby. The name *Whale River* seems to me hardly proper, since whales are never seen in the stream itself. Both Mr. Ford and I would like to have the stream bear the name of Dr. R. M. Anderson, Chief of the Division of Biology in the Canadian National Museum, in view of his keen interest in the exploration and study of the North Country. The stream has cut for itself a spectacular gorge, which Jack Ford and I called *Devil's Gorge.*

Captain George Back Island: A medium-sized island just at Seahorse Point, which at first appeared to be a peninsula, but which is actually cut off by a narrow shallow channel. The island to which I waded and across which I walked, may be two miles long and a mile or more wide. It is not as rugged as the cliffs farther north, but rises to a height of perhaps two hundred feet. Between the island and the "mainland" is a good, though small, harbor.

William Baffin Isles: Two rather high, precipitously walled islands, perhaps five or six miles north of Seahorse Point. These islands must have been seen by Baffin, since they are shown on one of his charts. They are not, however, to be found on modern charts, but like the other islands in this region should be named.



Scale 1: 1,500,000

MAP OF SOUTHAMPTON ISLAND, HUDSON BAY

(Constructed by G. M. Sutton from current maps and personally made field-maps)

Semple Islands: Three small islands lying offshore from Seahorse Point to the north or northeast. The Eskimos had no name for them. If this, indeed, be the region of Seahorse Point, then Back probably saw the islands during the course of his unhappy wanderings about in the *Terror*.

Tooloogak Bay: A narrow arm of the sea, extending possibly three miles inland, not far north of Seahorse Point. *Tooloogak* is the Aivilik Eskimo name for the Northern Raven, many of which nested in the cliffs about this bay. The name "Tooloogak Bay" does not appear on my map, because of the crowding of names at that point.

Ford's Rivers: I am not certain whether the two streams, which flow southward about ten miles east of the Post, join to form one stream before emptying into Coral Inlet, or not. The impression received in winter is that they have separate mouths, and so apparently, Mathiassen with dotted lines has shown them. They rise in the high country near Itiujuak, flow southward for a way, then turn somewhat west. In spring they are raging torrents, but they calm down considerably later in the season. I have named these streams after Mr. Ford and his son, in view of the fact that they have travelled thereabouts a great deal, and given to the scientific world many interesting facts concerning the Island as a whole.

Itiuachuk: A rather high mound or plateau of gravel, without any definite cliffs at the edge, just south of and not more than ten miles from Itiujuak (*Itiudjuaq* of Mathiassen).

Noovoodlik: The "peculiar, shed-like hills" of the various charts are called *Noovoodlik* by the natives. This word is not exactly a name, but is rather a descriptive word for this sort of gravelly, smooth-sloped hill. These *Noovoodlik* have been shown in former charts as too near the coast; the more westerly one according to Tommy Bruce and others really is one of a series of five such mounds lying between the shore of Fisher Strait and the head of the Bay of God's Mercy. All these hills are hills only by comparison with the very flat terrain about them.

Tooktootok Island: This, with the smaller islets about it, lies just north of East Bay, not far off the shore. It is, perhaps, six miles long and four miles wide, maybe larger. It has no cliff-like shores, but is nevertheless quite rugged and there is a considerable ridge in the middle, from which it is possible on a clear day to look across to Gore Point, to the body of water beyond that, and thence to other points of land, which stick out equally far. *Tooktootok* is the Aivilik expression for 'Place of Caribou.' Here, in mid-winter we saw numerous caribou tracks; and here, in summer, many of the caribou withdraw to rear their fawns. On most charts the island is drawn much too large.

Koodlootok River: A medium-sized stream, which empties into South Bay about ten miles west of the Post. This stream, in my opinion, has about the position of the Kirchhoffer River of Mathiassen's map. The Kirchhoffer, on the other hand, is farther to the west.

Duck Bay: A small arm of South Bay, just west of Seal Point. The Tern Islands (shown as only one island in Mathiassen's map) lie in this Bay, not named on my map.

Places Incorrectly Shown in Recent Maps

The only points, at which I am certain Mathiassen's map is wrong, are the small islands in South Bay, all of which are much too large. Bear Island is a mere mound of gravel scarcely large enough for a roomy native encampment. The two Tern Islands should appear as mere dots; and the rather long island he shows as just south of Munnimunnek (Manimaneq) is in reality only a barren sort of rocky bar a few rods long, to which the Eskimos have not even given a name. It is surprising that the little Kikkuktowyak Island (east of

Native Point) is not shown, since this is an important walrus hunting-ground, and a famous nesting-place for Eiders and Old-squaws. The really prominent Noovoodlik are not indicated at all in this map, nor is the broad plateau of Itiuachuk. All of the above places are, of course, relatively of little importance.

THE EXPEDITION TO SOUTHAMPTON ISLAND

1929-1930

The *Nascopie* reached Southampton Island early on the morning of Saturday, August 17, 1929. Through my port-hole I looked out across the gray water to a low-lying shore on one of the highest portions of which were a few neat white buildings, the Hudson's Bay Company's Trading Post. The great Island stretched out in a misty band, purplish gray to the east, where the land gradually rose to a considerable height in the distance, and yellowish brown to the west, where the horizon faded into the cloud-hung sky. The day was drab, chilly, colorless. Yet I thrilled at the very starkness of the world about me. At about noon I went ashore for the first time, and met some of the Eskimos, who were to be my friends and companions for the winter. Mr. Ford and his son Jack made me feel at home at once, and showed me where I was to live. I was instantly impressed with the neatness of the Post, and with the apparent happiness of the natives. I knew on that very first day, that I had not made a mistake in deciding to cast my lot for a year with these smiling, brown-faced people.

About the Post were many birds, which interested me immediately. Long-tailed Jaegers gracefully circled the *Nascopie*, their blackness contrasting strongly with the whiteness of the gulls and terns, which flew about everywhere. Near a pile of lumber at the Post was a half-grown White-rumped Sandpiper, here a familiar dooryard bird. Snow Buntings and Lapland Longspurs were to be seen on every hand. A raven circled overhead. Loons called in the distance. Families of horned larks ran about on the nearby ridges. Shore-birds of several varieties were to be seen or heard along the beaches.

I had been on the Island little more than half an hour, when a neatly prepared Blue Goose skin was shown to me, and I was told of a large breeding-ground of this rare bird at a place near Cape Kendall. A little later Mr. Ford showed me an egg, which he thought was that of a Bonaparte's Gull. I was so excited over the prospects of "my year," that I was impatient for the *Nascopie* to leave, so that I could get down to work.

On August 18 I spent most of the day aboard the *Nascopie*, though I had opportunity to take a short walk back of the Post. I perceived that summer was almost over. A few flowers were blooming; but no butterflies flew about; and I saw but one bumblebee, a few small flies, and one spider. Many birds were in evidence and I foresaw that I would be able to do much good ornithological work in the vicinity of the Post. The *Nascopie* left at about six o'clock in the evening. There was much shouting of farewells and roaring of rockets. As the great steamer pulled out I had a moment of peculiar exultation: peculiar, because I felt I had no right to experience such happiness at the thought of being cut off from the world at home!

The Post

The nine buildings at the Post were grouped on a smooth-topped ridge, not far from the water's edge. All but one of the buildings were white, and all but the Roman Catholic Mission to the rear were comparatively low-roofed. All of the Company buildings faced

southeast across the harbor. The principal structure, with its broad, familiar sign, was the Company Store. Here all of the trading went on, and here many valuable goods, clothing, food-stuffs, matches, and so on, were kept. To the east of this building stood the Chief Trader's dwelling, where Mr. Ford, Jack, and I lived, not at all a large house, but very comfortable, the second story being rather low. Farther to the east was the still smaller servants' dwelling, where lived the Eskimos, who discharged the various routine labors at the Post. To the west of the Store was a building where canned goods were kept, much of them still packed in strong wooden boxes. West of this building was another storehouse where traps, hardware of all sorts, lumber, oil, and so forth were stored. Considerably to the west of this building was the small powder-magazine, painted red, where ammunition was kept. Between this magazine and the stores, but standing almost at the water's edge, was the "oilhouse:" where all sorts of salted skins, walrus, white whale, and various kinds of seals were kept; where tons of foul-smelling dog-food waited the winter season; where seal-oil was stored in barrels; and where long strands of baleen were bundled up ready for shipment to "the Outside."

Back of the Company buildings were the two Missions, the rather large and neatly-steepled Roman Catholic Mission, a white, red-roofed, two storied structure; and the smaller, and at that time steeple-less Anglican Mission, where the native missionary, Keetlapik, lived.

Between the Company buildings and the beach, as well as on the higher land back of the Post, were numerous scattered canvas and sealskin tents, or *tupeks*, where lived the Eskimos, who had come to assist in unloading the supplies from the *Nascopie*, and in taking aboard the precious cargo. All of these tupeks disappeared in a day or two, for it is strictly against the regulations of the Company to encourage the natives to linger longer than necessary anywhere about the Post.

On the evening of that first day at the Post, Sam Ford, Jack, and I had a good time with the Eskimos, who shouted and danced about in great glee. Mr. Ford explained to all of them why I had come; and, as well as he could, what I wanted. They were all very cordial and shook hands with me in a friendly way. Then we three white men got several boxes of candy from the store and threw handfuls of the sweets into the air for a free-for-all scramble. What hilarity!

The natives grunted a little as they carried my great trunks up to a safe place alongside one of the Company buildings. I daresay they wondered what could be in those heavy boxes. I fancied their faces fell a little as they saw me unpacking my matter-of-fact equipment. But they did not complain. I hastened to take what special tools I should need at once over to the Factor's house, where I was to have my workroom and sleeping quarters. On the morrow, I foresaw, I should begin my survey of the Island in earnest.

Country About the Post

The region about the Post was not flat. The Post itself was built upon one of a large series of low, rocky ridges, which run for the most part in a northeasterly-southwesterly direction, and which become gradually higher farther inland. Between these ridges were pleasant grassy or willow-studded flats or prairies, where even at this late season a few flowers were still blooming. Most of these ridges were not especially rugged. Some, however, were crowned with heaps of boulders, or with a serried outcropping of rock. Most of the rock in this section appeared to be granitic. At Seal Point, to the west of the Post, the land rose

abruptly from the water to a height of about one hundred feet. The low cliffs in this section, while not high, were precipitous and rough.

All about the Post, especially in the region to the eastward of Seal Point, were hundreds of lakes, varying in size from shallow puddles across which a stone could be tossed, to great bodies of water a mile or more in length and of considerable depth.

About twenty miles to the northeast of the Post rose up the bold headland of Itiujuak, gray in the distance; south of this, across a wide prairie, was the more smoothly ascending Itiuachuk, the low ridges of which declined westwardly toward Prairie Point. North of the Post, its crest scarcely noticeable because of the gradual change in color between foreground and background, was Poorhouse Hill.

From the windows of the Post we could look across South Bay to Prairie Point, seven miles to the southeast. Toward the southwest, in the direction of Bear Island, the waters of the broad Bay extended, reflecting endlessly the varying moods of wind and sky.

From August 18 to 27 I made daily trips about the Post, familiarizing myself with the shore-line, learning of the places where I could wade across the brooks without becoming too wet, and finding, to my great surprise, that distances in this land of clear atmosphere were often deceptive. I walked once to the head of the Bay; again almost to Poorhouse Hill; many times to Seal Point, not far away; and inland to the north for a distance of about ten miles.

First Trip to Prairie Point

On August 25 Mr. Ford, his son Jack, Scotch Tom (a native) and I went by motor-boat to the low land across the Inlet, where many kinds of birds were said to nest. The day was wonderfully fine and we made the seven-mile journey in a short time. The country in which we found ourselves was so flat, and inland so grassy, that I could not resist calling it Prairie Point at once; and this name seems to have appealed to all who heard it. Along the smoothly curving shore-line were beaches of rough, angular chunks of limestone, which were very difficult and tiresome to walk upon. Just inland from these beaches were narrow lakes and pools, which seemed to fill in the depressions paralleling the shore-line. On the inner shores of these lakes and ponds a good deal of grass grew, and vegetation increased farther inland. The whole region was dotted and splotched with lakes, most of the inner ones quite large, but all comparatively shallow. About these lakes, through which Jack and I waded, swarmed thousands of Arctic Terns and Red Phalaropes, and great flocks of shore-birds fed along the outer beaches. After walking inland a good way into country, where the grass was so thick that we rarely even saw a rock, we found a small colony of Sabine's Gulls circling about with some Arctic Terns. We saw some Brant and a family group of other geese, but did not find any Snow Geese in the place where Jack had seen them during the spring.

To the eastward of Prairie Point the land rose gradually, in a series of smooth gravel ridges, to a great, barren plateau the highest part of which was called by the natives *Itiuachuk*. I later was to learn more about this plateau.

To the westward in the Bay we could see the uninteresting mound of gravel, known as Bear (or Bare) Island, where many sea-birds once had nested, but which was now a native encampment practically devoid of wild life. I did not actually visit Bear Island until the following winter and spring.

Though the day was warm, we encountered but few mosquitoes, and found no flowers blooming. Most of the shore-birds were obviously in migration. The young Sabine's Gulls were flying about with their parents and probably the only reason the young terns were not

all on the wing was that the egg-hunting proclivities of the Eskimos had forced the birds to lay second, and perhaps even third and much delayed sets.

The Trip to Cape Low

On August 27, Mr. Ford, Amaulik Audlanat, and I set out by motor-boat for Cape Low. We were prepared for a three weeks' journey, though I did not see how we could care properly for any large collection of specimens in the small amount of space which the small craft afforded. On the first day we travelled about fifty miles. Part of the time we had difficulty making headway against a strong wind

Soon after leaving the Post one of the "peculiar shed-like hills," which are indicated on some charts, came into view. It appeared to be a smooth-topped dome rising considerably higher than the surrounding flat country, perhaps to a height of two or three hundred feet. Mr. Ford told me that this "hill" was composed of gravel. It had the appearance to me of some sort of terminal or lateral moraine. As we went westward, we passed a small flat island, which I understood had no name, even among the Eskimos. This island was considerably to the west of the little Tern Islands west of Seal Point, and was just north of Munnimunnek Point, where on the flat promontory a native encampment could be seen at a distance.

Beyond Munnimunnek we passed some strange, bluff-like cliffs, which probably were of limestone, and which appeared to me to rise sheer from the water's edge to a height of about fifty feet. Along the bases of these yellow-brown cliffs the yawning mouths of several large caverns seemed to open. Some of the natives, I learned, had examined these caverns to some extent, but they had not given them a name.

Farther westward we made our way across the mouth of a cove, at the head of which a great ice-bank seemed to extend for several hundred yards along the shore. I had no opportunity to personally examine this interesting ice-bank, but my companions, both of whom had seen it close at hand, said that it was about nine hundred yards wide; that it never melted; and that it extended for a considerable distance inland. The country hereabouts was very flat, and there were no hills back from the shore, so this ice-bank could hardly be called a glacier, although it strongly suggested some such formation.

We saw many Ringed Seals, or *Netcheks*, as we went along, but noted few birds. We finally put to shore along a beautiful sandy beach, where Amaulik said it would be safe to spend the night. We propped the boat up as the tide went out, and prepared to leave early in the morning as soon as the tide should be full.

I found the country here very wild. In the sand were numerous tracks of Barren Ground Caribou and the trail of an Arctic Fox. In the far distance, its crest partly veiled in mists, rose a great mound or hill which seemed to loom higher as night descended. This, I was told, was another of the "peculiar, shed-like hills," which are called *Noovoodlik* by the Eskimos. The soil hereabouts was very sandy near the shore; farther inland it was more muddy, though the grasslands were broken up by low, gravel embankments where it was pleasant to walk after laboring along through the marshy prairies. These embankments were honeycombed with the burrows of lemmings. At nightfall I had the pleasure of seeing in the distance my first Little Brown Cranes; great, dignified birds, which trumpeted across the tundra, as they majestically flew away. The sound of their bugling sent shivers up and down my back.

I named this place *Four Rivers* on my chart, because near our boat anchorage four small streams emptied into the Bay. It was exceedingly difficult to follow the course of these streams, for they meandered a great deal through the flat country, passing along one side

of a gravel ridge for a distance of several hundred yards, then winding abruptly about the end of the ridge to follow down the opposite side in precisely the other direction. As I walked inland, I seemed to be constantly crossing rivers. They were pleasant streams, too, most of them shallow, with clean sparkling bottoms. I finally decided that, in general, three of the four "river valleys" here eventually led inland toward the distant Noovoodlik; and one paralleled the shoreline for some distance to the west, so it probably drained a different section of the country.

The lakes at this point were all small. The grass-lands extended almost without interruption to the very base of the Noovoodlik.

Early the following morning we left Four Rivers and voyaged westward, eventually reaching a point about eighteen miles east of Cape Low. The day began propitiously; but the wind soon sprang up and we had difficulty making any headway. Navigation of this coast is not easy, because there are so few good harbors. The whole coast is very shoal, and it is necessary to keep from two to ten miles out, even in a small boat, to avoid striking rocks or becoming grounded, especially at low tide. By the middle of the afternoon, as the wind's strength increased and the seas began to be tempestuous, I found myself getting sea-sick. I tried steering the boat and was refreshed to some extent by the spray, which struck across my face about twice every minute; but finally I had to give in. The gale became so fierce that Sam and Amaulik decided it best to make for the shore. The engine did her best; but we progressed tediously. Finally we began to strike bottom. The waves lifted us into the wind, rocked us back and forth, then slapped us down with awful jolts. We didn't know what to expect. We thought we should have to put out to sea to avoid being broken to pieces. When we started the engine again we did not move forward; the propeller was done! I was so sick by this time that I couldn't think very clearly; in fact I preferred not to. But my companions were still masters of the situation and they put themselves heroically to the task of getting us into some sort of shelter. Frankly, I don't know how they did it. They got into our little tender, rowed ahead through those rough waves, and dropped our anchor nearer the shore. By hauling from the larger boat at the anchor chain, then setting the anchor anew, and so on, they slowly brought the boat to a sheltered place. It meant at least two hours of very tiring work. Fortunately the wind subsided somewhat, and, after we had come in a way, we found ourselves in the lee of a low hill. Finally we could touch bottom with our boat hook and were able to push our way in. I helped a little in this work, though I had to be careful to avoid falling into the water from sheer dizziness. This was my first experience with really violent seasickness and I felt wretchedly ashamed of my uselessness.

Finally we agreed that we were near enough to shore to drop anchor for the night. As we lit our gasoline stove for boiling some tea, Arctic Foxes barked at us from the shore nearby. As I went to sleep I felt that it was only the pluck and endurance of my companions that had kept us all from drifting out into the merciless waves of Fisher Strait, whence there might not under the circumstances have been any return.

On the following morning there was a heavy frost. We found that the propeller had not been lost and that it probably could be repaired. We brought the boat nearer to the shore, and, at the going-out of the tide, Amaulik set to work with a brass bar and a file to repair the injury. I took a walk along the beach and noted many shore-birds, including some species, which I had not before seen on the Island. The country was very flat. On the highest places along the shore were remains of old stone fox-traps, which had been built by the Eskimos. I saw a family of cranes, and chased down a half-grown Whistling Swan, which could not yet fly.

At about six o'clock in the evening we journeyed a short way westward to a little, well sheltered cove, where we planned to wait awhile before going on to Cape Low. The barometer was steadily falling, so we expected the worst in the way of weather. Owing to headwinds and rain we lingered at this anchorage until September 1. I found the country very monotonous inland, although along the shore it was somewhat rolling. I spent much of my time going up and down the beach, where I searched for interesting shore-birds. On August 31 I went some distance to the westward and found a large lake, about which a colony of Herring Gulls lived, and where along the inner shore a large number of swan-nests were to be seen. Inland from the coast there were not many lakes.

On September 1 at about ten o'clock in the morning we set out again for Cape Low. We encountered rough seas and some wind, but kept on, passing an ugly reef or two, and finally wound about among the shoals into the mouth of the Ranger or Kashigiak River, where Amaulik knew there was a good harboring place. It was a relief to get in out of the wind, and to cruise quietly along in the shelter of the gravel embankments, which lined the mouth of the stream.

I found the Ranger River to be only a medium-sized stream. At its mouth it was probably not over one hundred yards wide. Its banks were of clean gravel and they were rather steep and high. Almost immediately after we anchored, a handsome Ranger Seal stuck his head out of the water near the boat, and Amaulik straightway went off on a hunt. The weather was fairly bright and pleasant and the wind abated by evening. I was so busy skinning specimens that I had no opportunity to get out that day.

On the following morning (September 2) I walked inland, and to the westward almost to Cape Low. I followed the Ranger River to a big shallow lake, and found that to the west and north of this lake several streams made their way out from the grassy tundra. The whole country was exceedingly flat. Even in the far distance the land did not seem to rise much. The outer beach was of sand and gravel, and extended in graceful curves for miles out toward Cape Low. At the top of the beach was an unbroken line of large flat pieces of white limestone, which evidently had been tossed up by the roughest storms. Inland a short way from the salt water were numerous depressions between the gravel embankments and most of these depressions were long, narrow lakes, some of them quite deep. Birds were to be seen everywhere; great flocks of Snow and Blue Geese, companies of Whistling Swans, bands of jaegers, and hordes of shore-birds.

Just east of the Cape proper was a sort of cove, which at low tide became a vast mud-flat. Here the shore-birds swarmed and jaegers, eternally hungry, swooped about among them all day long. At high tide the beach all along this stretch of coast-line was about one hundred feet wide, and rose at a rather steep angle, making walking difficult, save along the very rim of limestone rocks.

The weather steadily promised to become worse. Since we had determined that we were too late to find any young Blue Geese, and were afraid that we could not find any good harbors between Cape Low and Cape Kendall, we decided we had better go back to the Post before the season advanced further. On September 4 at about half past four o'clock in the morning we set out on the return trip. It was cloudy, windy, chilly, and rainy. At about ten o'clock we sighted a native camp along the shore and made our way in, feeling that the wind was getting too strong for us. Upon reaching shore we found ourselves not far west of our former anchorage at Four Rivers. Noovoodlik rose up in the distance, the only landmark of any general sort in the whole region. Inland from the beaches there were but few birds. In my notes I find this passage: "At this awful 'camp' there seems to be little

bird-life. I walked a long way inland, following a brook, and going toward the strange shed-like hill, which sticks up in the distance. It is blowing hard, unpleasantly so, so that shooting is difficult. The shore-birds are very wild. Our boat is propped up among a bed of stinking kelp, which smells awfully." We remained at this place until September 9. The weather was disagreeable. It rained and blew, and we had much fog. I tramped along the shore nearly every day and made a few trips inland, where the bird-life was disappointingly scarce. One day three Polar Bears were killed by the natives. I found that some of the interior country was very marshy, unpleasantly so in fact, for I had difficulty in getting out of one muddy place, through which I had waded hoping to get closer to a pair of cranes.

I noted that along one side of the distant Noovoodlik there was a band of light color. This, the natives told me, was caused by some different sort of gravel. This hill was rather symmetrical, the sides sloping up at about the same angle, giving it decidedly the appearance of a great tabernacle, or pyramidal tent.

On the morning of September 9 at about two o'clock we started for "home." It was cold. There was a scum of ice on the salt water. During the night there had been a brilliant auroral display. But the day was calm and the ocean smooth as glass. We had little trouble in making the Post just after noon. As we made our way along the west shore of South Bay we passed the mouth of the Kirchhoffer River, which I could see was a fair-sized stream.

Travels About the Post

On September 10 we had the first snow-fall of the autumn. On the following day we had an even heavier snow, perhaps an inch deep. I was out for specimens on both days and was delighted to see the tiny leaves of the dwarf trees turning to a rich scarlet, which glowed in the sunlight.

Seal Point

On September 12 I made a special study of Seal Point to the west of the Post. Just off this point were several small islands, some of them flat and sandy, others angular and rocky. The outermost bars of the Point were sandy and here pretty stands of tall grass grew. On the western side of the Point the land rose abruptly to a considerable height, almost as a cliff. On the crest of this high land were many beacons, which were the remains, I was told, of Captain Munn's camp. Some of these beacons were built up of loose stones to a height of about eight feet. Lying about on the ground were numerous bones of caribou, walrus, and seals. Inland from the Point were several lakes, one of which with rather high shores was quite large. In this lake were many islands, some of them rocky, with precipitous sides.

The western side of Seal Point extended into a wide bay, which Mr. Ford usually called Duck Bay. The head of this bay was quite shallow, and the shore-line dropped down to a low sandy beach, quite different from any beach at Seal Point or to the eastward of the Post. A small stream emptied into the head of Duck Bay. In the middle of the bay were two tiny islands, both of them flat and grassy, which I later called, as had Captain Munn, the Tern Islands. I did not visit them until the following spring.

Poorhouse Hill

On September 14 I made a special trip to the high ridge about ten miles back of the Post, which is known as Poorhouse Hill. I had gone thither in quest of Rock Ptarmigan, which up to that time I had been unable to locate. I found Poorhouse Hill to be a ridge of granitic rock two miles long, parts of which, especially toward the west, were quite rough.

Toward the east it ran into other similar ridges, which extended inland toward the distant Itiujuak.

From the crest of Poorhouse Hill I could look inland a great distance. I could see that the country there was very flat, and that there were not many lakes. There seemed to be little grass in the plateau-like country inland from the Hill, the vegetation being mostly moss and lichens. In the sheltered places among the rocks I found some pretty clumps of rock ferns, and some willow-trees, which grew to a height of nearly four feet.

Along the southern face of Poorhouse Hill there was a cliff-like place, where I thought Duck Hawks might nest. I found a family of Rock Ptarmigan feeding not far from this bluff.

The Trip to Seahorse Point

At about eight o'clock on the morning of September 18 we left the Post on the motor-boat *Shookak*, bound for Seahorse Point. Our purpose was to locate a whale, which Amaulik had mortally wounded in July. On board were Jack Ford, Amaulik Audlanat, Kyakjuak, and I. We left in a wild, loose, snow-flurry, which died down an hour later. At noon we passed close to Bear Island and made our way across the bay north of Native Point, which the natives call Ooyalajuak (Big Stone Bay), and which in my chart is called Shallow Bay.

We reached Native Point in the middle of the afternoon. Here I was delighted at being able to see some of the remains of the encampments of the extinct Saglernmiut, the Eskimos who had inhabited Southampton prior to the coming of the Aivilikmiut and Okomiut in recent years. I did not attempt to excavate any of these ruins, since I was not properly prepared to preserve ethnological material of this sort, and did not, furthermore, have an official permit for so doing. The ruins were considerably overgrown with grass, but I could see that the structures had been well made. Through one of them a small stream was running.

To the north of Native Point was a prominent ridge, or mound of gravel, which had rather steep sides. Jack and I made our way to this hill and scaled it, finding at the top several graves of the Saglernmiut, in which were plainly to be seen the bones of both old and young persons, crudely covered with flat stones. Not far away, lying on the moss, was a human skull. (Pl. III; fig. 4).

There were a good many lakes in this section, most of them not far from the coast. At Native Point proper there was a fairly good harbor, where, even in the roughest weather, the waves never became very high. Not far from the beach were the skin and canvas *tupeks* of the present-day natives, and near these, lying on the sand, were the remains of many *Kellilughak* (White Whales or Porpoises) which had been recently killed. As Jack and I made our way back to the camp, we were overtaken by a native, who was driving his dog-team and *komatik* across the moss and gravel, and here I had my first *komatik*-ride. The dogs grunted and whined at the added weight, but I was told not to mind, since there was plenty of dog-food at the camp.

On the following morning we left Native Point at about nine o'clock, taking with us Kooshooak, Muckik's son. Though there was not a high wind, there was a considerable roll and we all very nearly got sea-sick. As we pushed along through the green water, we saw many seals, countless hordes of Old-squaw Ducks, some bands of red-eyed walrus, which interested and thrilled me greatly. We passed by the flat little island, which the Eskimos called Kikkuktowyak, noting many Eiders and Old-squaws in the vicinity. We journeyed only about thirty miles that day, reaching a little cove not far from Leyson Point, where, in a place

well sheltered from the wind, we anchored. Jack Ford and I set out immediately to explore a cliff, which rose up some distance inland. We walked along the clean, limestone-pebble beach for quite a way, turned north between some lakes, which appeared to be quite deep, and finally found ourselves at the base of a crumbling limestone-cliff about fifty feet high, back of which the land stretched off in a barren, almost desert-like plateau toward a few lakes, which were lined with a little grass. Into the cove, where we had anchored the *Shookak*, flowed a little stream which we called Lake Brook. At the mouth of this stream many young King Eiders were seen. The numerous lakes along the shore were frozen by this time. In the afternoon we had a snow-flurry.

On the following day we began looking for the whale carcass, which we had come to find. Amaulik remembered where the beast had been wounded, and told us that we ought to find it without trouble. We set out from Lake Brook at about 4:45 A.M., and made our way close to the shore, looking carefully along the beach as we went along. At about nine o'clock we sighted a great flock of gulls circling about in a little cove. We turned the motor-boat in, scanned the edge of the water with our binoculars, and finally saw the gigantic torso sprawled among the kelp. Masses of gulls flew about it, dipping low, alighting on the broad back, and walking along the sand at the edge of the black mass.

We landed *on the whale*. As we walked over the flabby mass the Eskimos shouted in glee, and gave peculiar little dances expressive of their happiness at finding the coveted *shookak* or baleen. Personally I thought the stench was the worst I had ever smelled, though I was glad to have a look at the huge tongue, the tiny eyes, the monstrous tail and the oddly fringed whale-bone which lined the mouth. Amaulik set to work almost at once at sawing the jaws off. I had the pleasure of myself finding fully a quarter of the valuable baleen buried in the sand quite a way down the beach.

In spite of the excitement about the whale I managed to take a walk, and found that the nearby flats at low tide swarmed with shore-birds. Inland the country was decidedly barren, the only vegetation being found along the shores of the numerous lakes. The beaches were beautifully clean, being composed of glistening sand. When the tide went out, exposing the ocean's floor, I discovered a most remarkable series of formations, which seemed to me to resemble gigantic petrified cabbage-heads with leaves six or eight inches thick. The crowns of these "cabbage-heads" had, of course, been worn away by erosion, exposing the very hearts. Pieces of the crumbling formations were lying about everywhere and they made walking difficult.

The Eskimos killed a Polar Bear, which had come to feed on the carcass of the whale. Naturally we called the cove, in which we were anchored, *Whale Cove*.

On the following day, September 21, at about noon we set out for Seahorse Point. As we journeyed eastward, the land gradually became higher and more rocky. I could not tell exactly when we rounded Leyson Point. In fact our course seemed to change so little, as we made our way along the southern coast, that I could not help feeling that the charts, which we had, were wrong. At about 2 o'clock in the afternoon we passed some strange caverns, which opened and led deeply back into the faces of some high cliffs. We came close to one of these caverns and looked back into its black recesses. By this time we had left the limestone country well behind us. The ridges here were all of granite. In the distance loomed the imposing dome of Mount Minto, not a high mountain in reality, but decidedly noticeable by comparison. The water beneath us was deep. As we passed the shore we saw numerous sheltered coves, where at least a motor-boat could find an excellent harbor. What a contrast to the shoal, exposed region of Cape Low!

In the middle of the afternoon we rounded a high headland, where we saw two Polar Bears. After making a hasty landing, we all piled out and raced across the moss and rocks to the base of a cliff and watched one of the Eskimos stalk *Nanook*. He killed him without much trouble, and we had glorious bear-steak that night. The cliffs at this point had a somewhat columnar structure, and there were great heaps of talus at the bases. As I walked over the ground near the edge of the water, I noticed that my footfalls produced odd sounds under-foot. By jumping about I could tell that there were considerable hollow spaces under me. I questioned the natives about the matter, and they told me there are several places in the region where there are subterranean caverns.

We reached Seahorse Point before evening and dropped anchor in a well-sheltered inlet. We all mounted the top of a nearby hill and surveyed our surroundings. On the distant cliffs we could make out the forms of five Polar Bears.

On September 22 I spent much time in observing the country at this interesting place. I soon found that just off Seahorse Point there was a fair sized island, which was almost joined to the "mainland" at low tide. To the east of the Point there were other islands also, all of them small, as well as some slender peninsulas, which became islets at high tide. The whole region was decidedly rough. Along the Fox Channel shore were great banks of snow, which looked as if they had never completely melted, and stranded chunks of green ice. To the north were high cliffs, precipitous walls of gray-green and brown, which rose almost directly from the sea to a height of about three hundred feet. Here lived Duck Hawks and ravens. Northwest of Seahorse Point was a narrow fjord, now almost completely packed with ice, which led inland for a distance of three miles. The whole region was so decidedly different from that which my charts indicated, that I decided to make a detailed sketch-map. On September 23 I had a memorable experience with a Polar Bear, in which I learned that it is better to hunt *Nanook* with a rifle than with a shot-gun.

On September 24 we left Seahorse Point early in the morning to begin our return to the Post. After leaving the high cliffs we began again to see great flocks of Old-squaws. A little after noon we again found ourselves at Whale Cove and we spent some time "taking on" a small load of baleen. That evening we anchored at the mouth of a fair-sized stream nearby, which I later found made its way down from the barren interior through a very interesting gorge.

I had opportunity to explore this river on the following three days, because we were held up by head-winds. At its mouth the stream was about eighty yards wide at this season. In the spring, of course, it would be a mighty torrent. In following the river inland I had sometimes to walk along some very crumbly banks of limestone. About a mile in from its mouth the stream-bed turned sharply to the right into a gorge. Here erosion along the cliff-faces was so rapid, that bits of rock seemed constantly to be falling. The sound of this breaking off and slipping down of earth was not at all pleasant. A mile farther inland I came upon a spectacular chasm; a seventy-foot deep canyon, which the river and its principal tributary had cut through the rock just below two cataracts. When I first encountered this gorge I had one of the thrills of my life. I was not walking along the stream-side, but merely across the open country nearby. The whole region had for some time appeared to be merely an uninteresting, sterile stretch of tundra almost devoid of vegetation, such as one becomes accustomed to seeing in this section. All at once I heard the roar of a waterfall. I was considerably taken aback, but was scarcely prepared to find myself after a few steps forward, peering over the edge of a steep cliff down into an apparently bottomless pool of emerald-green water. The crest of the cliff, on which I stood, had such a deteriorated appearance that

I moved about with care. Nevertheless I made bold enough to drop several stones into the chasm; and I watched them as they swung from side to side in the water and made their way down, down, down, until they vanished from sight. I have no idea how deep this pot-hole below the falls actually was, but the whole gorge was so unexpected, especially on such an island as Southampton, and it was surrounded with such almost ominous mystery, that Jack and I couldn't help calling it Devil's Gorge, even though I wanted to name the river after Dr. Anderson of the Canadian National Museum.

By this time the weather was getting cold. The lower part of the gorge, where the water was quiet, was frozen so firmly that we could walk about on it without trouble, and when we tried to catch some of the tiny trout, which could be seen swimming about near the bottom, we found the ice to be a foot thick. The ice had formed in peculiar whorls in the upper part of the gorge. The natives told me that in the spring the whole chasm was so full of water, as to make the falls scarcely perceptible.

On September 27 at three o'clock in the morning we left Whale Cove. We reached Native Point late in the afternoon, and, since it was still light and the weather good, decided to go on across the bay to an anchorage to the south of Prairie Point. In Native Point Bay we encountered a herd of about twenty walruses, which we watched for some time, chasing them about with the motor-boat. We finally found a fair place to spend the night and dropped anchor at night-fall. On the following day we reached the Post at noon.

The Head of South Bay

Most of the month of October I spent about the Post, travelling to all the best hunting-grounds at Seal Point, Poorhouse Hill, and Duck Bay. The weather had grown steadily more wintry, of course, so that by the end of the month the natives were travelling everywhere on their *komatiks*.

On October 22 Amaulik Audlanat and I took a komatik-trip to the head of South Bay. Amaulik hunted for seals on the ice, while I walked inland to see what birds I could find. We had some difficulty in getting the dog-sled across the rough ice, for the Inlet was not yet frozen shut. The dogs fell into the water several times. The Eskimos were used to all this, and probably thought it queer that I had a serious expression on my face, when the newly formed ice sagged with our weight and when the *komatik* banged and whacked this way and that through the rough chunks; but at this time I was not yet an Eskimo and had yet a great deal to learn.

I found the region at the head of the Bay very flat. I followed the poorly defined, snow-buried banks of a stream for about four miles inland, and was amazed that, as I progressed, the distant Itiujuak seemed not to come at all closer. There were a few large stones, which one might use as landmarks; otherwise the landscape was exceedingly dreary. The stream-beds, which I followed, were well known to Mr. Ford and his son, who had trapped along them ever since they had come to the Island. I found there were two branches to the stream, one of which turned north a short way inland.

During most of November I spent my time learning the ways of Arctic Foxes, several of which I caught before the season was over. I was out nearly every day, and covered from four to fifteen miles in my visits to the line of traps.

The Trip to East Bay

On November 22 Amaulik Audlanat and I left the Post with *komatik* and dog-team bound for the East Bay country, where we planned to hunt Barren Ground Caribou. The

weather was cold, and I suffered a good deal because of my nose, which had already been frozen rather badly. On the first day of this trip I learned more about the actual life of an Eskimo than I had learned in all my previous experience. At noon I helped to erect a temporary shelter from the wind out in the middle of a wide lake, and ate frozen raw fish with my tea. That evening I tried to be of assistance in the building of the igloo, but I wasn't of much account. That night I couldn't sleep (though I was warm in my caribou-skin sleeping-bag) partly because this new experience was so exciting and partly because a native by the name of Khagak, who had joined us at the happy hour of supper-time, snored so loudly, that I could not do anything but listen to him. We built our igloo not far from Itiujuak, which appeared upon closer inspection to be rather a high cliff.

On the next day Khagak left us. We made our way across the flat tundra, moving most of the time with painful slowness because of the softness of the snow. We looked vainly for Muckik, who should have joined us the previous evening. Finally, after going perhaps eight miles in several hours of travelling, we decided to camp for the night. Just as Amaulik started the igloo, Muckik came swooping in on his lightly loaded *komatik*, dogs barking, and sled-runners grinding merrily. All was jollity.

In the morning I was wakened by the singing of some native tunes. We began our journey farther into the *Tooktoo* (caribou) country at about nine o'clock. As we ambled along the men set a good many fox-traps and watched for signs of game. We saw virtually no bird-life of any sort. We made good time, while we were crossing the frozen lakes; but through the snow we usually plodded slowly, with the dogs whining and panting. In the early afternoon we came upon caribou tracks, many of them, at the edge of a big lake. The tracks were not fresh, but they encouraged us. Our *igloo* that night was built at the edge and in the shelter of a rocky ridge within sight of East Bay.

The sky-line here, as at Seahorse Point, was majestic. In the distance rose the familiar dome of Mount Minto, now to our southeast. Across the gray expanse of East Bay, almost frozen shut at this time, was the high land at Gore Point. As I looked at this bold knob I did not wonder that it had originally been named Gore Island. I could see, even from our camp-site, that East Bay was not correctly indicated on the charts. The open water in the middle of the Bay was *steaming* in the distance. Imagine weather so cold that the Arctic Ocean should steam!

On November 25 we were out all day, hunting caribou. In the course of our journeying, we went across a frozen channel to a nearby island, which is indicated on most charts and which should bear the native name *Tooktootok* (meaning 'Place of Caribou'). This Island I judged to be about six miles long. Along the edges it was low, but running almost its entire length was a considerable ridge, about three hundred feet high at its highest point. We saw many signs of caribou, but saw no animals. We visited this island twice. Fox Channel at this time was altogether open, but there was a good deal of ice piled roughly along the shore.

From Tooktootok I could see Gore Point very plainly, and in the distance Mount Minto. Beyond Gore Point, and obviously extending farther north than this Point, were two or three other necks of land which are placed considerably too far south on the charts.

On November 26 we went northward into the high country bordering Fox Channel. We surveyed our surroundings from bold eminences and could see a great distance in the clear atmosphere. The whole region was dotted with lakes of all sizes, most of them small, and I learned from my companions that the place was called "Koksaoktok," meaning 'Place of Loons.' On the following day, after making our way again into the high country, we saw

our first caribou, and before nightfall had shot four, including a nice male. We saw also some ruins of the houses of the extinct Saglernmiut. On this day I had my first experience in driving the dog-team and *komatik*.

Thanksgiving Day we spent in our igloo. The weather had turned bad and we were obliged to stay in to avoid being lost or snowed under. The storm lasted until December 1. On December 2 we made one more try for caribou, but failed to find any. Then we started home. That day we got back to one of our former camps. The recent gale had filled the old igloo with snow, but we got to work and excavated it, and soon were comfortable for the night. On the following day, travelling through the wind with the temperature at 34° below zero, we finally reached the Post. I was glad to be able to wash my face once more.

During the winter I made several *komatik*-trips with the natives, but did not traverse any new country. The natives, too, travelled about a good deal in their hunting; but for the most part they went into country, with which all of us were by this time fairly familiar. In one of the trips Amaulik changed his course purposely so as to collect for me a specimen of one of the large willow-trees which were known to grow along the valley of the Kirchhoffer River far in the interior.

Trips to the Floe

During late winter and early spring I made several trips to the floe with the Eskimos. On nearly all of these we either stopped at, or went close to, Bear Island, so I became familiar with that barren piece of ground.

Though the trips to the floe were exceedingly interesting from the standpoint of adventure, they did not add much to my knowledge of the geography of the island, so I will not discuss them in detail here. Once or twice we came very near to Native Point, and then again, went westward across the frozen expanse of South Bay almost to Munnimunnek Point, and the "peculiar shed-like hill" nearby.

As the season advanced, the edge of the floe across the mouth of South Bay gradually receded northward, the ice being broken off by the action of the tides, wind, and waves.

Vain Attempt to Reach Fox Channel

On May 10 Tommy Bruce (an Eskimo) and I loaded our *komatik* with a week's rations and a frozen *Netchek* (seal) for dog-food, and started for the high land along the shore of Fox Channel, where we hoped to find White Gyrfalcons nesting. We left the Post at about 10 o'clock in the morning and headed the dogs for the knob at Itiujuak. We reached the shelter of this high cliff at about five o'clock P.M., having had a pleasant trip, seen a few ptarmigan, and caught an Arctic Fox alive in a shallow burrow out on the open tundra.

The weather was agreeable most of the morning, but in the early afternoon the wind began to blow and the snow to drift badly. We found to our dismay that we had forgotten our *panas* (snow-knives) and that the tent-ropes were very old and frayed. Nevertheless we pitched camp, fastening the tent-ropes with heavy stones sunk in the snow.

I found the cliff at Itiujuak to be about two hundred feet high, a precipitous wall of rock facing about east, in the sheltered niches of which Snow Buntings were roosting.

On the following day we tried to push farther to the east in spite of the wind, but the dogs could not make any headway, we soon became frightfully cold, and at last decided that we had better make camp before leaving the shelter of the high land. Had we not stopped when we did, we might have run into serious trouble, for the wind increased hourly to a terrific gale. The temperature was not low, presumably not becoming colder than +18 F.,

but it snowed heavily, blew fiercely, and our tent was first almost blown away, then all but buried. It was providential that we were in the shelter of the cliff, over the uppermost crest of which the snow curled ceaselessly and ominously.

In spite of the fierce wind, I tried to do some hunting, and actually got two Arctic Hares on the crest of Itiujuak on the following day, though in retrieving one I had the weird experience of nearly stepping off the edge of a cliff into snow-filled space. We also got some ptarmigan, and I succeeded in collecting a few specimens of small birds from the flocks of early migrants, which fluttered about seeking shelter from the storm.

On May 22 we decided we could not go on. The wind was still blowing, dog-food was all gone, and our tent was on the point of blowing away at any moment. Had we not forgotten the snow-knives, we might have made an igloo; as it was, we were almost at the mercy of the elements. Disappointed at our failure, we started back to the Post through the merciless wind, which was, however, now at our backs. We found that our friends had worried about us, for we had been out through one of the worst gales of the season. On the following day the weather became, if possible, even worse. Not until the evening of the 24th did the clouds disappear and sunshine return. The drifting of the snow had utterly changed the aspect of the whole landscape in the region at the head of South Bay.

Trips to Koodlootok River

During the spring and summer I made several walking trips to the mouth of the Koodlootok River, about seven or eight miles west of the Post. In reaching this interesting hunting-ground I always walked along the shore of Duck Bay,[23] or crossed the tundra farther inland. Duck Bay I found to be quite shallow for some distance out from the shore. The land rose very gradually, first into a narrow grassy belt which extended three hundred yards or so inland from the shore, then into a series of low gravel-ridges, which became higher farther inland. The stream which emptied into Duck Bay was very small at all seasons of the year, save during the early summer, when the melting snow and the frequent rains transformed the trickling brooklet into a rough, brawling torrent, which could not be waded in safety. About a mile back from the edge of the bay this stream made its way through a short gorge, the banks of which were heaps of smooth gravel.

Koodlootok River itself was a much larger stream. At the mouth the banks were of clean gravel, almost devoid of vegetation. Farther inland there was a considerable growth of willows along the bank, some of which attained almost the height of a man in the more sheltered places. Here, I learned, redpolls nested. Between the valley of the Koodlootok and the basin of Duck Bay was a rather high, exceedingly barren plateau.

Tern Islands and Bear Island

During two of my trips to the mouth of the Koodlootok River I walked over the ice in such a way as to include the two little Tern Islands in my itinerary. These islands were situated in about the middle of Duck Bay. The larger was about a quarter of a mile across, and reached a height of about twenty feet. At the edge it was very rocky, the shore being strewn with big boulders. Farther up it was more sandy or gravelly, and on the very crest it was covered with grass and low flowering plants. The smaller island was only about half as large, was not nearly so high, and had little or no grass on its crest. Only the larger

[23]Duck Bay is not named on my chart, Pl. I. It really is not a "bay" but the body of water just west of Seal Point, in which the two small Tern Islands are situated.

island was used as a nesting place. by the terns, Old-squaws, Northern Eiders, and Mandt's Guillemots.

Bear Island, which I visited several times, was about half or three-quarters of a mile long, and perhaps fifty feet high at its crest. Along the outermost points of the island were rows and piles of boulders, though most of the shore-line was a gravelly or sandy beach. The higher part was covered with grass and flowers in summer. In some of the depressions were fair-sized puddles, or lakes, about which a few small birds lived. All the terns, gulls and larger birds, which formerly inhabited the island in great numbers, had long since disappeared as a result of the repeated visits of the natives.

Kirchhoffer River

During the middle of the summer I made one visit to the mouth of the Kirchhoffer River, and found it to be the largest stream in the vicinity of the Post. The banks at the mouth were entirely of gravel. The course of the stream seemed to be somewhat circuitous. In the distance I could see a sort of gap in the highest gravel hill, through which the water flowed. I did not have the opportunity to see the fifty-foot fall, which the river is reported to make a short way back from its mouth. The country about the river-mouth was very barren; farther back, however, so I was told by the natives, the banks were lined with grass and stunted willow-bushes.

SECTION 3. BIBLIOGRAPHY

The following list is not by any means a complete Bibliography. Such a Bibliography would include hundreds of titles covering the general fields of Ornithology, Mammalogy, Botany, Geography, Geology, Ethnology, and so forth; and would furthermore include the titles of nearly all the published journals, treatises, reports, and recollections of Arctic explorers, whose names are legion. The list here given only presents the titles of such works as have been consulted in connection with the preparation of Part I, and Part II, Section II, of this Volume. Definite citations of many of these papers are given by the writer in the preceding and following parts of this work. Bibliographical lists will accompany the sections dealing with Mammals, Insects, etc.

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Fig. 1

Fig. 2

Fig. 3

Fig. 4

SOUTHAMPTON ISLAND ESKIMOS OF THE AIVILIK TRIBE

Fig. 1. "Tommy Bruce," who made the Cape Kendall Blue Goose sub-expedition.
Fig. 2. Amaulik Audlanat, better known as "John Ell," who accompanied the author to Cape Low, Seahorse Point, and East Bay.
Fig. 3. "Bye and Bye," and some of the Aivilik children, at Bear Island.
Fig. 4. Amaulik Audlanat (left) and Muckik at East Bay. They have just set a fox-trap.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

ESKIMOS

FIG. 1. Two young Aivilik girls at the entrance to their *igloo*, Bear Island. The girl to the left is carrying a baby on her back

FIG. 2. Muckik skinning out a *Netchek* or Ringed Seal.

FIG. 3. The *Oogjook*-skin (Square Flipper Seal-skin) tent, or *tupek* of the Aivilik Eskimo, as it appears in summer.

FIG. 4. Skull of one of the extinct Saglernmiut, photographed exactly as found at Native Point.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

VIEWS ON SOUTHAMPTON ISLAND

Fig. 1. The pretty flowering plant, *Dryas octopetala*, photographed by James Thom of the Hudson's Bay Company.
Fig. 2. A rock-fern, photographed at Poorhouse Hill, near the Post.
Fig. 3. Hill at Native Point, composed of fragments of limestone.
Fig. 4. The gravel plateau of Itiuachuk, inland from Prairie Point.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

SCENES ON SOUTHAMPTON ISLAND

Fig. 1. Falls in the gorge of the Anderson River, photographed in late September, 1929.
Fig. 2. Itiujnak in a blizzard, photographed in late May, 1930.
Fig. 3. The flat country near Cape Low, Noovoodlik in the far distance.
Fig. 4. Cliff at Seahorse Point.